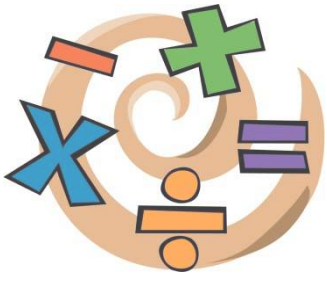
CBSE-NCERT

PRINTABLE

WORKSHEETS

MATHEMATICS

(Class 7)



Index

Class- VII (Mathematics)

Course Structure for Class-VII Maths

Number System (50 hrs)

(i) *Knowing our Numbers:Integers*

- Multiplication and division of integers (through patterns). Division by zero is meaningless
- Properties of integers (including identities for addition & multiplication, *commutative, associative, distributive*) (through patterns). These would include examples from whole numbers as well. Involve expressing commutative and associative properties in a general *form*. Construction of counterexamples, including some by children. Counter examples like
- subtraction is not commutative.
- Word problems including integers (all operations)

(ii) *Fractions and rational numbers:*

• Multiplication of fractions
• Fraction as an operator
• Reciprocal of a fraction
• Division of fractions
• Word problems involving mixed fractions
• Introduction to rational numbers (with representation on number line)
• Operations on rational numbers (all operations)
• Representation of rational number as a decimal.
• Word problems on rational numbers (all operations)
• Multiplication and division of decimal fractions
• Conversion of units (length & mass)
• Word problems (including all operations)

(iii) *Powers:*

• Exponents only natural numbers.
• Laws of exponents (through observing patterns to arrive at generalisation.)

(i) $a^m \cdot a^n = a^{m+n}$

(ii) $\left(a^m\right)^n = a^{mn}$

(iii) $\frac{a^m}{a^n} = a^{m-n}$, where $m-n \in \mathrm{N}$

(iv) $a^m \cdot b^m = (ab)^m$

Algebra (20 hrs)

ALGEBRAICEXPRESSIONS

- Generate algebraic expressions (simple) involving one or two variables
- Identifying constants, coefficient, powers
- Like and unlike terms, degree of expressions e.g., x^2y etc. (exponent≤3, number of variables)
- Addition, subtraction of algebraic expressions (coefficients should be integers).
- Simple linear equations in one variable (in contextual problems) with two operations (avoid complicated coefficients)

Ratio and Proportion (20 hrs)

• Ratio and proportion (revision)
• Unitary method continued, consolidation, general expression.
• Percentage- an introduction.
• Understanding percentage as a fraction with denominator 100
• Converting fractions and decimals into percentage and vice-versa.
• Application to profit and loss (single transaction only)
• Application to simple interest (time period in complete years).

Geometry (60 hrs)

(i)Understanding shapes:

- Pairs of angles (linear, supplementary, complementary, adjacent, vertically opposite) (verification and simple proof of vertically opposite angles)
- Properties of parallel lines with transversal (alternate, corresponding, interior, exterior angles)

(ii)Properties of triangles:

- Angle sum property (with notions of proof & verification through paper folding, proofs using property of parallel lines, difference between proof and verification.)
- Exterior angle property
- Sum of two sides of a it's third side
- Pythagoras Theorem (Verification only)

(iii)Symmetry

- Recalling reflection symmetry
- Idea of rotational symmetry, observations of rotational symmetry of 2-D objects. (90^0,120^0, 180^0)
- Operation of rotation through 90^0 and 180^0 of simple figures.

- Examples of figures with both rotation and reflection symmetry (both operations)
- Examples of figures that have reflection and rotation symmetry and vice-versa

(iv)Representing 3-D in 2-D:

- Drawing 3-D figures in 2-D showing hidden faces.
- Identification and counting of vertices, edges, faces, nets (for cubes cuboids, and cylinders, cones).
- Matching pictures with objects (Identifying names)
- Mapping the space around approximately through visual estimation.

(v)Congruence

• Congruence through superposition (examples-blades, stamps, etc.)
• Extend congruence to simple geometrical shapes e.g. triangles, circles.
• Criteria of congruence (by verification) SSS, SAS, ASA, RHS

(vi)Construction (Using scale, protractor, compass)

- Construction of a line parallel to a given line from a point outside it. (Simple proof as remark with the reasoning of alternate angles)
- Construction of simple triangles. Like given three sides, given a side and two angles on it, given two sides and the angle between them.

Mensuration (15 hrs)

• Revision of perimeter, Circumference of Circle

Area

Concept of measurement using a basic unit area of a square, rectangle, triangle, parallelogram and circle, area between two rectangles and two concentric circles.

Data handling (15 hrs)

i. Collection and organisation of data – choosing the data to collect for a hypothesis testing.
ii. Mean, median and mode of ungrouped data – understanding what they represent.
iii. Constructing bargraphs
iv. Feel of probability using data through experiments. Notion of chance in events like tossing coins, dice etc. Tabulating and counting occurrences of 1 through 6 in a number of
v. throws. Comparing the observation with that for a coin. Observing strings of throws, notion of randomness.

CBSE Worksheet-01

CLASS – VII Mathematics (Integers)

Choose correct option in questions 1 to 5.

1. At Shimla temperature was – 5°C on Monday and then it dropped by 2°C on Tuesday. What was the temperature of Shimla on Tuesday?
   a. – 7°C b. – 3°C
   c. 3°C d. 7°C

2. 6 × (-15) = _____
   a. 90 b. -90
   c. -21 d. 21

3. (-4) × (-3) × (-2) = _____
   a. 24 b. 9
   c. -24 d. -9

4. (–2) × (3 + 5) = _____
   a. -10 b. 10
   c. 16 d. -16

5. (–12) ÷ (– 6) = _____
   a. 2 b. -2
   c. 6 d. -6

Fill in the blanks:

6. On a number line when we add a _____ integer, we move to the right.
7. The additive inverse of any integer a is _____.
8. For any two integers a and b, $a + b$ is an _____.
9. For any integer a, $a \times 0 = 0 \times a =$ _____.

10. Find:
    a. (–36) ÷ (– 4)
    b. (–201) ÷ (–3)

11. In a test (+5) marks are given for every correct answer and (–2) marks are given for every incorrect answer. Radhika answered all the questions and scored 30 marks though she got 10 correct answers.

12. In a class test containing 15 questions, 4 marks are given for every correct answer and (–2) marks are given for every incorrect answer. Gurpreet attempts all questions but only 9 of her answers are correct. What is her total score?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. positive
7. $-a$
8. integer
9. 0
10. a. 9
    b. 67
11. 10
12. Gurpreet's total score = 36 + (−12) = 24

CBSE Worksheet-02

CLASS – VII Mathematics (Integers)

Choose correct option in questions 1 to 5.

1. A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine floating 1200 m below the sea level. What is the vertical distance between them?
   a. 6200 m b. 4800 m
   c. 4000 m d. 6000 m

2. 5 × (-4) = _____
   a. 20 b. -20
   c. -9 d. 9

3. (-5) × (-4) × (-3) = _____
   a. 60 b. 12
   c. -60 d. -12

4. (– 4) × [(–2) + 7] = _____
   a. -1 b. 20
   c. 1 d. -20

5. (–20) ÷ (5) =____
   a. -4 b. 4
   c. 15 d. -15

Fill in the blanks:

6. On a number line when we add a _____ integer, we move to the left.
7. The additive inverse of any integer _____ is *a.*
8. For any two integers *a* and *b*, we can say *a* + *b* = ____.
9. For all integers *a* and *b*, *a* × *b* is an _____.

10. Find:
    a. (–54) ÷ 9
    b. (–261) ÷ (–3)

11. In a test (+5) marks are given for every correct answer and (–2) marks are given for every incorrect answer. Jay answered all the questions and scored (–12) marks though he got 4 correct answers. How many incorrect answers had they attempted?

12. In a class test containing 15 questions, 4 marks are given for every correct answer and (–2) marks are given for every incorrect answer. One of her friends gets only 5 answers correct. What will be her score?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. negative
7. $(-a)$
8. $b + a$
9. integer
10. a. -6
    b. 87
11. 16
12. Her friend's total score = 20 + (–20) = 0

CBSE Worksheet-03

CLASS – VII Mathematics (Integers)

Choose correct option in questions 1 to 5.

1. At Srinagar temperature was – 5°C on Monday. On Wednesday, it rose by 4°C. What was the temperature on this day?
   a. – 1°C b. – 9°C
   c. 1°C d. 9°C

2. (-3) × 5 = _____
   a. 15 b. -15
   c. 2 d. -2

3. (-2) × (-5) × (-3) = _____
   a. 30 b. 10
   c. -30 d. -10

4. (– 8) × [(–2) + (–1)] = _____
   a. 11 b. -24
   c. -11 d. 24

5. 72 ÷ (– 8) = _____
   a. -9 b. 9
   c. 80 d. -80

Fill in the blanks:

6. On a number line when we subtract a _____ integer, we move to the left.
7. The _____ of any integer *a* is *-a.*
8. for any integers *a*, *b* and *c*, we can say *a* + (*b* + *c*) = _____.
9. For any two integers *a* and *b*, *a* × *b* = _____.

10. Find:
    a. 125 ÷ (–25)
    b. (–325) ÷ (–13)

11. A shopkeeper earns a profit of Re 1 by selling one pen and incurs a loss of 40 paise per pencil while selling pencils of her old stock. In a particular month she incurs a loss of Rs 5. In this period, she sold 45 pens. How many pencils did she sell in this period?

12. Suppose we represent the distance above the ground by a positive integer and that below the ground by a negative integer. An elevator descends into a mine shaft at the rate of 5 metres per minute. What will be its position after one hour?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. positive
7. additive inverse
8. $(a + b) + c$
9. $b \times a$
10. a. -5
    b. 25
11. 125 pencils
12. Position of the elevator after 60 minutes = (–5) × 60 = – 300 m, i.e., 300 m below ground level.

CBSE Worksheet-04

CLASS – VII Mathematics (Integers)

Choose correct option in questions 1 to 5.

1. A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine floating 1500 m below the sea level. What is the vertical distance between them?
   a. 6500 m b. 3500 m
   c. 3000 m d. 6000 m

2. (-5) × 6 = _____
   a. 30 b. -30
   c. 11 d. -11

3. (-6) × (-4) × (-2) = _____
   a. 48 b. 12
   c. -48 d. -12

4. 10 × [(6 + (−2)] = _____
   a. 80 b. -40
   c. -80 d. 40

5. 21 ÷ (−3) =_____
   a. -7 b. 7
   c. 18 d. -18

Fill in the blanks:

6. On a number line when we subtract a _____ integer, we move to the right.
7. The _____ of any integer *(-a)* is *a.*
8. For any integer *a, a* + 0 = *a* = _____.
9. For any three integers *a*, *b* and *c,* (*a* × *b*) × *c* = _____.

10. Find:
    a. 80 ÷ (−5)
    b. 64 ÷ (−16)

11. A shopkeeper earns a profit of Re 1 by selling one pen and incurs a loss of 40 paise per pencil while selling pencils of her old stock. In a particular month she incurs a loss of Rs 5. In this period, she sold 45 pens. In the next month she earns neither profit nor loss. If she sold 70 pens, how many pencils did she sell?

12. Suppose we represent the distance above the ground by a positive integer and that below the ground by a negative integer. If it begins to descend from 15 m above the ground, what will be its position after 45 minutes?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. negative
7. additive inverse
8. $0 + a$
9. $a \times (b \times c)$
10. a. -16
    b. -4
11. 175 pencils
12. The final position of the elevator = –225 + 15 = –210 m, i.e., 210 m below ground level.

CBSE Worksheet-05

CLASS – VII Mathematics (Integers)

Choose correct option in questions 1 to 5.

1. In a quiz, positive marks are given for correct answers and negative marks are given for incorrect answers. If John's scores in five successive rounds were 25, – 5, – 10, 15 and 10, what was his total at the end?
   a. 35 b. 65
   c. 50 d. 45

2. (-3) × (-4) = _____
   a. -12 b. 12
   c. 7 d. -7

3. (-7) × (-2) × (-1) = _____
   a. 14 b. 10
   c. -14 d. -10

4. (–15) × [(–7) + (–1)] = _____
   a. 23 b. -120
   c. -23 d. 120

5. 45 ÷ (–3) = _____
   a. -15 b. 15
   c. 48 d. -48

Fill in the blanks:

6. When two positive integers are added we get a _____ integer.
7. For any two integers a and b, $a - b = a$ + additive inverse of $b = a$ + _____.
8. (–5) + (.....) = (– 8) + (.....)
9. For any integer a, $a \times 1 = 1 \times a$ = _____.

10. Find:
    a. 90 ÷ (– 45)
    b. (–136) ÷ 4
11. The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight, at what time would the temperature be 8°C below zero?

12. A certain freezing process requires that room temperature be lowered from 40°C at the rate of 5°C every hour. What will be the room temperature 10 hours after the process begins?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. positive
7. $(-b)$
8. -8, -5
9. a
10. a. -2
    b. -34
11. 9 pm
12. -10° C

CBSE Worksheet-06

CLASS – VII Mathematics (Fractions and Decimals)

Choose correct option in questions 1 to 5.

1. $\frac{9}{7} \times 6 =$ _____

   a. $\frac{54}{7}$ b. $\frac{15}{7}$ c. $\frac{51}{7}$ d. $\frac{57}{7}$

2. $\frac{1}{2} of 10 =$ _____

   a. 20 b. 5 c. 8 d. 12

3. $\frac{1}{2} \times \frac{1}{5} =$ _____

   a. $\frac{1}{7}$ b. $\frac{5}{2}$ c. $\frac{1}{10}$ d. $\frac{2}{5}$

4. $7 \div \frac{2}{5} =$ _____

   a. 35 b. $\frac{37}{5}$ c. $\frac{2}{35}$ d. $\frac{35}{2}$

5. 0.01 × 0.01 = _____

   a. 0.0001 b. 0.001 c. 0.1 d. 1

Fill in the blanks:

6. A _____ is a fraction that represents a part of a whole.
7. Reciprocal of $\frac{2}{5}$ is _____.
8. A fraction acts as an operator _____.
9. The product of two proper fractions is _____ each of the fractions that are multiplied.
10. In a class of 40 students $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study mathematics and the remaining students like to study Science. How many students like to study English?
11. Sushant reads $\frac{1}{3}$ part of a book in 1 hour. How much part of the book will he read in $2\frac{1}{5}$ hours?
12. Find the average of 4.2, 3.8 and 7.6.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. proper fraction
7. $\frac{5}{2}$
8. 'of'
9. less than
10. 8
11. $\frac{11}{15}$
12. 5.2

CBSE Worksheet-07
CLASS – VII Mathematics (Fractions and Decimals)

Choose correct option in questions 1 to 5.

1. $\frac{2}{7}\times 3 =$ _____

   a. $\frac{6}{7}$ b. $\frac{5}{7}$ c. $\frac{23}{7}$ d. $\frac{11}{7}$

2. $\frac{1}{4} of 12 =$ _____

   a. 16 b. 3 c. 8 d. 48

3. $\frac{2}{3}\times\frac{4}{5} =$ ____

   a. $\frac{2}{15}$ b. $\frac{4}{15}$ c. $\frac{8}{15}$ d. $\frac{6}{8}$

4. $\frac{2}{5}\div 7 =$ _____

   a. 35 b. $\frac{37}{5}$ c. $\frac{35}{2}$ d. $\frac{2}{35}$

5. $0.02 \times 0.03 =$ _____

   a. 0.0006 b. 0.006 c. 0.6 d. 6

Fill in the blanks:

6. In proper fraction, the numerator is _____ the denominator.
7. Reciprocal of $\frac{7}{2}$ is _____.
8. $\frac{1}{2} of\ 2 is$ _____.
9. The product of a proper and an improper fraction is less than the improper fraction and _____ the proper fraction.
10. In a class of 40 students $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study mathematics and the remaining students like to study Science. How many students like to study Mathematics?
11. Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is $\frac{3}{4}$ m. Find the distance between the first and the last sapling.
12. Each side of a regular polygon is 2.5 cm in length. The perimeter of the polygon is 12.5 cm. How many sides does the polygon have?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. less than
7. $\frac{2}{7}$
8. 1
9. greater than
10. 16
11. $\frac{9}{4}m$
12. 5 sides

CBSE Worksheet-08
CLASS – VII Mathematics (Fractions and Decimals)

Choose correct option in questions 1 to 5.

1. $\frac{13}{11} \times 6 =$ _____

   a. $\frac{78}{11}$ b. $\frac{19}{11}$ c. $\frac{79}{11}$ d. $\frac{53}{11}$

2. $\frac{1}{3} of\ 27 =$ _____

   a. -9 b. 9 c. 81 d. 30

3. $\frac{1}{5} \times \frac{1}{7} =$ _____

   a. $\frac{1}{12}$ b. $\frac{5}{7}$ c. $\frac{1}{35}$ d. $\frac{7}{5}$

4. $3 \div \frac{9}{2} =$ _____

   a. $\frac{15}{2}$ b. $\frac{27}{2}$ c. $\frac{3}{2}$ d. $\frac{2}{3}$

5. 0.1 × 0.5 = _____

   a. 0.05 b. 0.005 c. 0.0005 d. 5

Fill in the blanks:

6. An _____ is a combination of whole and a proper fraction.
7. Reciprocal of $\frac{3}{8}$ is _____.
8. $\frac{1}{6} of\ 30\ is$ _____ .
9. The product of two improper fractions is _____ the two fractions.
10. In a class of 40 students $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study mathematics and the remaining students like to study Science. What fraction of the total number of students like to study Science?
11. Lipika reads a book for $1\frac{3}{4}$ hours every day. She reads the entire book in 6 days. How many hours in all were required by her to read the book?
12. A car covers a distance of 89.1 km in 2.2 hours. What is the average distance covered by it in 1 hour?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. improper fraction
7. $\frac{8}{3}$
8. 5
9. greater than
10. $\frac{2}{5}$
11. $10\frac{1}{2}$ hours
12. 40.5 km

CBSE Worksheet-09
CLASS – VII Mathematics (Fractions and Decimals)

Choose correct option in questions 1 to 5.

1. $3 \times \frac{1}{8} =$ _____

a. $\frac{3}{8}$ b. $\frac{1}{2}$ c. $\frac{25}{8}$ d. $\frac{23}{8}$

2. $\frac{1}{5} of\ 20 =$ _____

a. 100 b. 4 c. 25 d. 15

3. $\frac{1}{7} \times \frac{1}{3} =$ ____

a. $\frac{1}{10}$ b. $\frac{3}{7}$ c. $\frac{1}{21}$ d. $\frac{7}{3}$

4. $\frac{1}{3} \div \frac{1}{7} =$ _____

a. 21 b. $\frac{1}{21}$ c. $\frac{3}{7}$ d. $\frac{7}{3}$

5. $0.03 \times 0.5 =$ _____

a. 0.015 b. 0.0015 c. 0.15 d. 15

Fill in the blanks:

6. In an improper fraction, the numerator is _____ the denominator.
7. Reciprocal of $\frac{5}{11}$ is _____.
8. $\frac{2}{3} of 15\ is$ _____.
9. A _____ of a fraction is obtained by inverting it upside down.
10. Vidya and Pratap went for a picnic. Their mother gave them a water bag that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water. How much water did Vidya drink?
11. A car runs 16 km using 1 litre of petrol. How much distance will it cover using $2\frac{3}{4}$ litres of petrol?
12. A vehicle covers a distance of 43.2 km in 2.4 litres of petrol. How much distance will it cover in one litre of petrol?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. greater than
7. $\frac{11}{5}$
8. 10
9. reciprocal
10. 2 liters
11. 44 km
12. 18 km

CBSE Worksheet-10

CLASS – VII Mathematics (Fractions and Decimals)

Choose correct option in questions 1 to 5.

1. $2 \times \frac{1}{7} =$ _____

a. $\frac{2}{7}$ b. $\frac{3}{7}$ c. $\frac{15}{7}$ d. $\frac{13}{7}$

2. $\frac{1}{2} of 16 =$ _____

a. 32 b. 8 c. 14 d. 18

3. $\frac{3}{7} \times \frac{4}{11} =$ _____

a. $\frac{3}{77}$ b. $\frac{4}{77}$ c. $\frac{12}{77}$ d. $\frac{7}{18}$

4. $\frac{3}{4} \div \frac{2}{5} =$ _____

a. 20 b. $\frac{3}{10}$ c. $\frac{8}{15}$ d. $\frac{15}{8}$

5. $0.4 \times 0.02 =$ _____

a. 0.008 b. 0.0008 c. 0.8 d. 8

Fill in the blanks:

6. $\frac{2}{5} - \frac{1}{5} =$ _____

7. Reciprocal of $\frac{7}{9}$ is _____.

8. $\frac{3}{5} of\ 20\ is$ _____.

9. $2.4 \div 0.2 = 24 \div 2 =$ _____.

10. Vidya and Pratap went for a picnic. Their mother gave them a water bag that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water. What fraction of the total quantity of water did Pratap drink?

11. Sushma reads $\frac{1}{5}$ part of a book in 1 hour. How much part of the book will he read in $3\frac{2}{3}$ hours?

12. Find:
    a. $7.75 \div 0.25$ b. $76.5 \div 0.15$

Answer key:

1. a
2. b
3. c
4. d
5. a
6. $\frac{1}{5}$
7. $\frac{9}{7}$
8. 12
9. 12
10. $\frac{3}{5}$
11. $\frac{1}{5}\times 3\frac{2}{3}=\frac{1}{5}\times\frac{11}{3}=\frac{11}{15}$
12. a. 31
    b. 510

CBSE Worksheet-11

CLASS – VII Mathematics (Data Handling)

Choose correct option in questions 1 to 4.

1. The ages in years of 10 teachers of a school are: 32, 41, 28, 54, 35, 26, 23, 33, 38, 40
What is the age of the oldest teacher?

   a. 54 years b. 23 years
   c. 40 years d. 28 years

2. Following are the marks in a class assessment. What is the range of the data?

4	6	7	5	3	5	4	5	2	6
2	5	1	9	6	5	8	4	6	7

   a. 9 b. 8
   c. 1 d. 2

3. The mode of the given set of numbers: 1, 1, 2, 4, 3, 2, 1, 2, 2, 4 is _____.

   a. 4 b. 3
   c. 2 d. 1

4. Find the median of the data: 24, 36, 46, 17, 18, 25, 35.

   a. 20 b. 24
   c. 17 d. 25

Fill in the blanks:

5. _____ is a measure of the central tendency of the group of data.
6. The _____ is always one of the numbers in a data.
7. A _____ is a representation of numbers using bars of uniform widths.

8. John studies for 4 hours, 5 hours and 3 hours respectively on three consecutive days. How many hours does he study daily on an average?

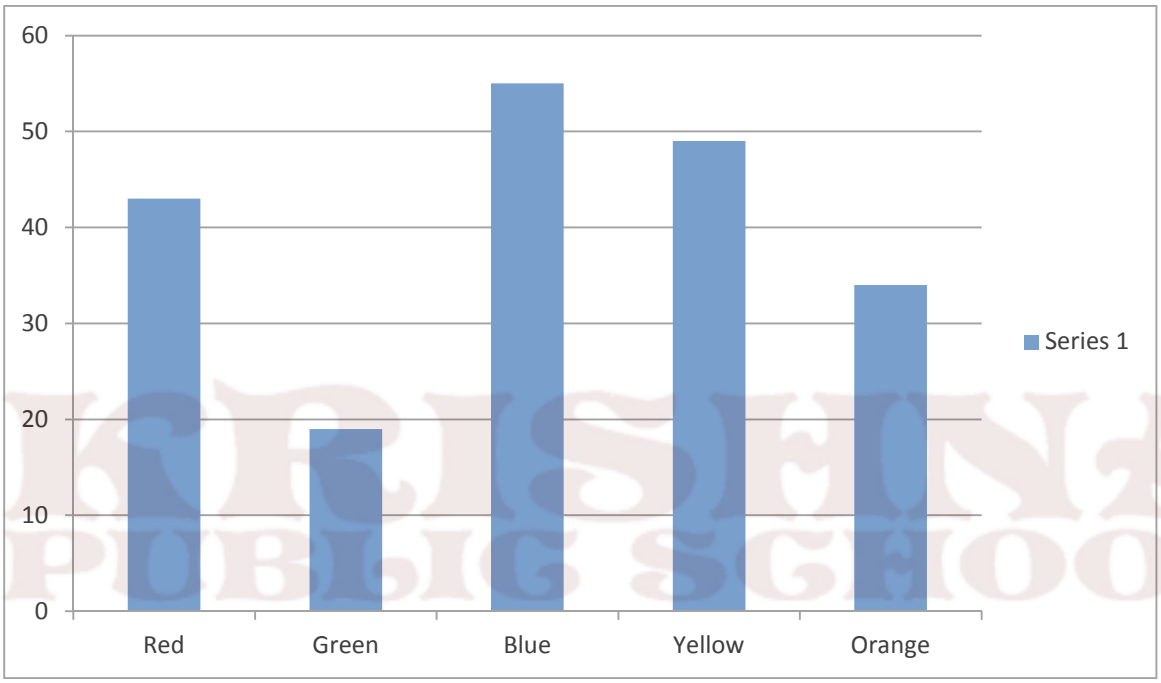
9. A cricketer scores the following runs in eight innings: 58, 76, 40, 35, 46, 45, 0, 100
Find the mean score.

10. Two hundred students of 6th and 7th class were asked to name their favourite colour so as to decide upon what should be the colour of their School Building. The results are shown in the following table. Represent the given data on a bar graph.

Favourite Colour	**Red**	**Green**	**Blue**	**Yellow**	**Orange**
Number of Students	43	19	55	49	34

Answer key:

1. a
2. b
3. c
4. d
5. Average
6. mode
7. bar graph
8. 4 hours
9. 50
10.



CBSE Worksheet-12

CLASS – VII Mathematics (Data Handling)

Choose correct option in questions 1 to 4.

1. The ages in years of 10 teachers of a school are: 32, 41, 28, 54, 35, 26, 23, 33, 38, 40
What is the age of the youngest teacher?
   a. 23 years b. 54 years
   c. 40 years d. 28 years

2. The mode of the given numbers 2, 6, 5, 3, 0, 3, 4, 3, 2, 4, 5, 2, 4 is _____.
   a. 5 b. 4
   c. 3 d. 2

3. The scores in mathematics test (out of 25) of 15 students is as follows:
19, 25, 23, 20, 9, 20, 15, 10, 5, 16, 25, 20, 24, 12, 20
Find the median of this data.
   a. 9 b. 15
   c. 20 d. 25

4. There are 6 marbles in a box with numbers from 1 to 6 marked on each of them. What is the probability of drawing a marble with number 5?
   a. 1 b. $\frac{1}{2}$
   c. $\frac{1}{3}$ d. $\frac{1}{6}$

Fill in the blanks:

5. _____ lies between the highest and the lowest value of the given data.

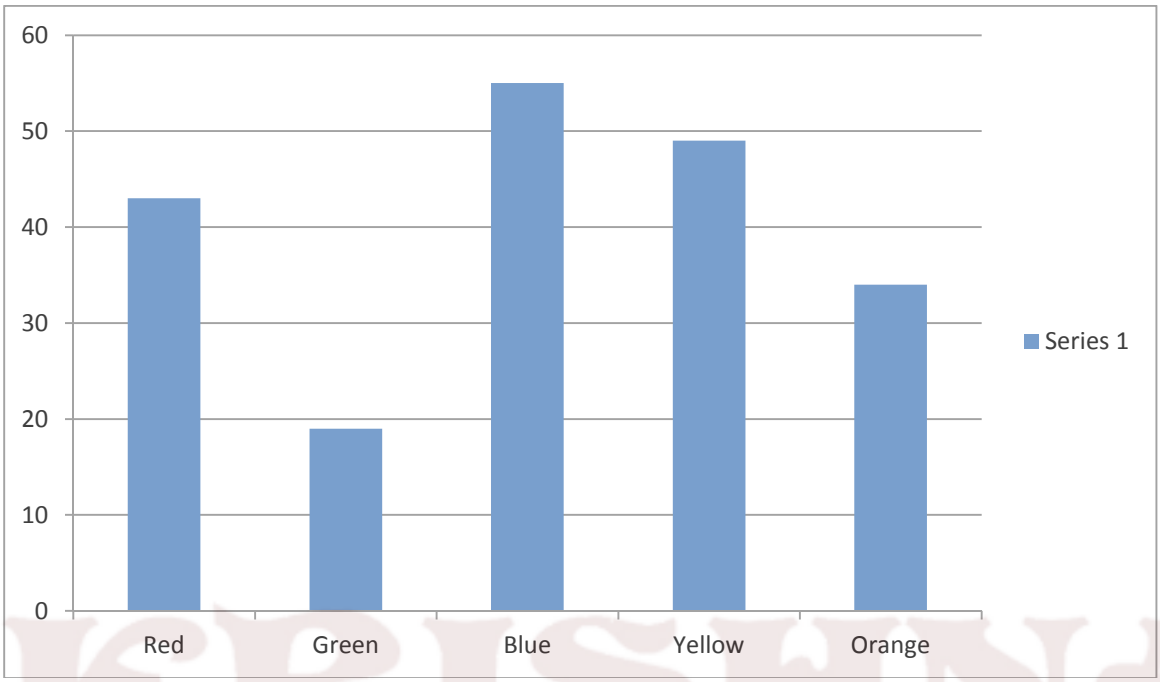
6. A data always has a _____.

7. _____ refers to the value which lies in the middle of the data with half of the observations above it and the other half below it.

8. A batsman scored the following number of runs in six innings:
36, 35, 50, 46, 60, 55
Calculate the mean runs scored by him in an inning.

9. The marks (out of 100) obtained by a group of students in a science test are 85, 76, 90, 85, 39, 48, 56, 95, 81 and 75. Find the:
   a. Highest and the lowest marks obtained by the students.
   b. Range of the marks obtained.
   c. Mean marks obtained by the group.

10. Two hundred students of 6th and 7th class were asked to name their favourite colour so as to decide upon what should be the colour of their School Building. The results are shown in the following bar graph.



Answer the following questions with the help of the bar graph:

a. Which is the most preferred colour and which is the least preferred?

b. How many colours are there in all?

Answer key:

1. a
2. b
3. c
4. d
5. Average
6. mode
7. Median
8. 47

9. a. highest marks = 95, lowest marks = 39
   b. 56

10. a. Blue is most preferred colour and yellow is least preferred colour
    b. 5

CBSE Worksheet-13

CLASS – VII Mathematics (Data Handling)

Choose correct option in questions 1 to 4.

1. The ages in years of 10 teachers of a school are: 32, 41, 28, 54, 35, 26, 23, 33, 38, 40
What is the range of the ages of the teachers?
a. 31 years b. 23 years
c. 54 years d. 28 years

2. The mode of the given numbers 2, 14, 16, 12, 14, 14, 16, 14, 10, 14, 18, 14 is _____.
a. 12 b. 14
c. 16 d. 18

3. The runs scored in a cricket match by 11 players is as follows:
6, 15, 120, 50, 100, 80, 10, 15, 8, 10, 15
Find the median of this data.
a. 10 b. 100
c. 15 d. 50

4. The rainfall (in mm) in a city on 7 days of a certain week was recorded as follows:

Day	**Mon**	**Tue**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**
Rainfall (in mm)	0.0	12.2	2.1	0.0	20.5	5.5	1.0

Find the range of the rainfall in the above data.
a. 20 b. 15
c. 4.5 d. 20.5

Fill in the blanks:

5. The _____ of two numbers will always lie between the two numbers.
6. When a coin is thrown, it has _____ possible outcomes.

7. Following are the marks in a class assessment.

4	6	7	5	3	5	4	5	2	6
2	5	1	9	6	5	8	4	6	7

Find the arithmetic mean.

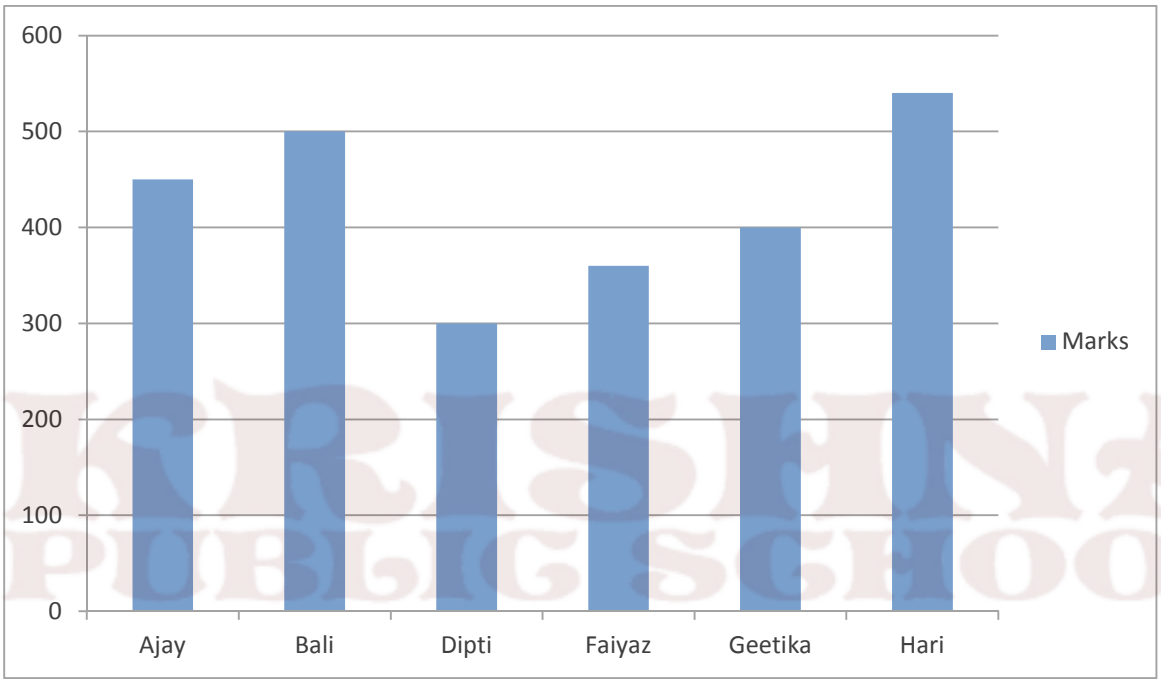
8. Heights (in cm) of 25 children are given below: 168, 165, 163, 160, 163, 161, 162, 164, 163, 162, 164, 163, 160, 163, 16, 165, 163, 162, 163, 164, 163, 160, 165, 163, 162
What is the mode of their heights?

9. Following data gives total marks (out of 600) obtained by six children of a particular class. Represent the data on a bar graph.

Students	**Ajay**	**Bali**	**Dipti**	**Faiyaz**	**Geetika**	**Hari**
Marks Obtained	450	500	300	360	400	540

Answer key:

1. a
2. b
3. c
4. d
5. mean
6. two
7. 5
8. 163
9.



CBSE Worksheet-14
CLASS – VII Mathematics (Data Handling)

Choose correct option in questions 1 to 4.

1. Following are the marks in a class assessment. Which number is the highest?

4	**6**	**7**	**5**	**3**	**5**	**4**	**5**	**2**	**6**
2	**5**	**1**	**9**	**6**	**5**	**8**	**4**	**6**	**7**

a. 9 b. 1
c. 3 d. 8

2. The heights of 10 girls were measured in cm and the results are as follows: 135, 150, 139, 128, 151, 132, 146, 149, 143, 141. What is the height of the tallest girl?
a. 135 b. 151
c. 141 d. 128

3. The weights (in kg.) of 15 students of a class are: 38, 42, 35, 37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47. Find the median of this data.
a. 42 b. 50
c. 40 d. 37

4. The heights of 10 girls were measured in cm and the results are as follows: 135, 150, 139, 128, 151, 132, 146, 149, 143, 141. What is the range of the data?
a. 25 b. 20
c. 12 d. 23

Fill in the blanks:

5. The difference between the highest and the lowest observation is the _____ of the observation.
6. When a die is thrown, it has _____ possible outcomes.
7. The _____ of a set of observations is the observation that occurs most often.

8. The ages in years of 10 teachers of a school are: 32, 41, 28, 54, 35, 26, 23, 33, 38, 40 What is the mean age of these teachers?

9. Following are the margins of victory in the football matches of a league. 1, 3, 2, 5, 1, 4, 6, 2, 5, 2, 2, 2, 4, 1, 2, 3, 1, 1, 2, 3, 2, 6, 4, 3, 2, 1, 1, 4, 2, 1, 5, 3, 3, 2, 3, 2, 4, 2, 1, 2. Find the mode of this data.

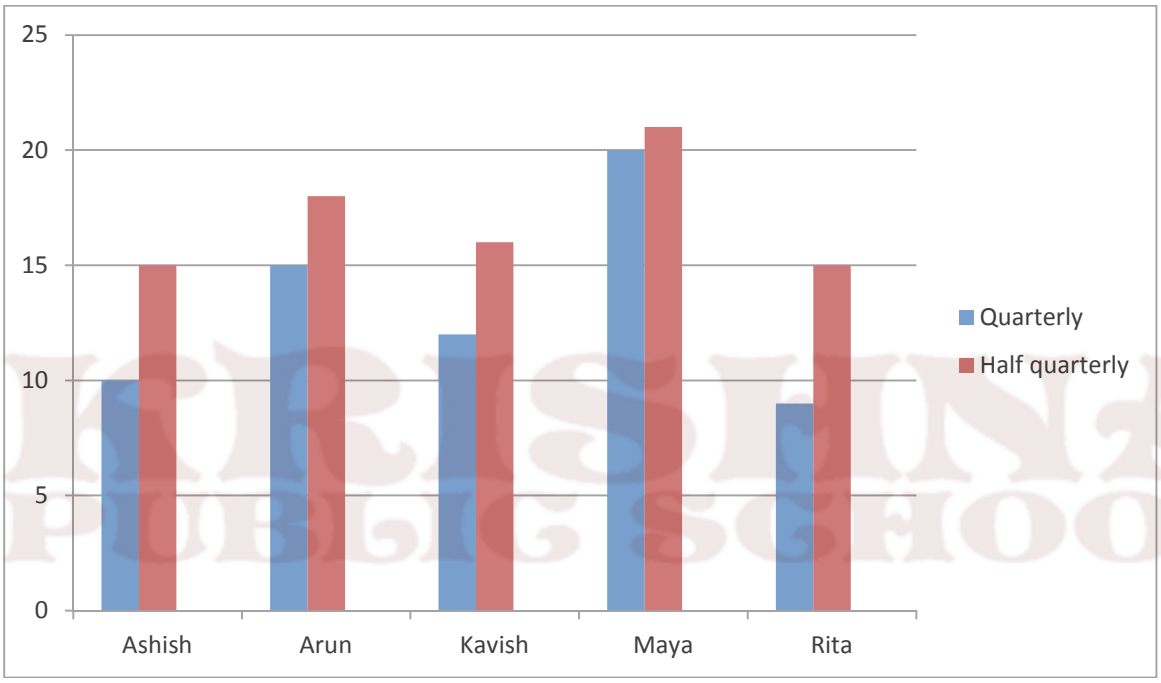
10. A mathematics teacher wants to see, whether the new technique of teaching she applied after quarterly test was effective or not. She takes the scores of the 5 weakest children in the quarterly test (out of 25) and in the half yearly test (out of 25):

Students	**Ashish**	**Arun**	**Kavish**	**Maya**	**Rita**
Quarterly	10	15	12	20	9
Half yearly	15	18	16	21	15

Represent the above data in double bar graph.

Answer key:

1. a
2. b
3. c
4. d
5. range
6. six
7. mode
8. 35 years
9. 2
10.



CBSE Worksheet-15

CLASS – VII Mathematics (Data Handling)

Choose correct option in questions 1 to 4.

1. Following are the marks in a class assessment. Which number is the lowest?

4	**6**	**7**	**5**	**3**	**5**	**4**	**5**	**2**	**6**
2	**5**	**1**	**9**	**6**	**5**	**8**	**4**	**6**	**7**

a. 1 b. 9
c. 3 d. 8

2. There are 6 marbles in a box with numbers from 1 to 6 marked on each of them. What is the probability of drawing a marble with number 2?

a. $\frac{1}{2}$ b. $\frac{1}{6}$
c. $\frac{1}{3}$ d. $\frac{1}{4}$

3. Find the median of the data: 13, 16, 12, 14, 19, 12, 14, 13, 14.

a. 13 b. 12
c. 14 d. 16

4. The data 6, 4, 3, 8, 9, 12, 13, 9 has mean _____.

a. 2 b. 4
c. 12 d. 8

Fill in the blanks:

5. _____ help to compare two collections of data at a glance.
6. Before _____ data we need to know what we would use it for.

7. Find the mean of the first five whole numbers.

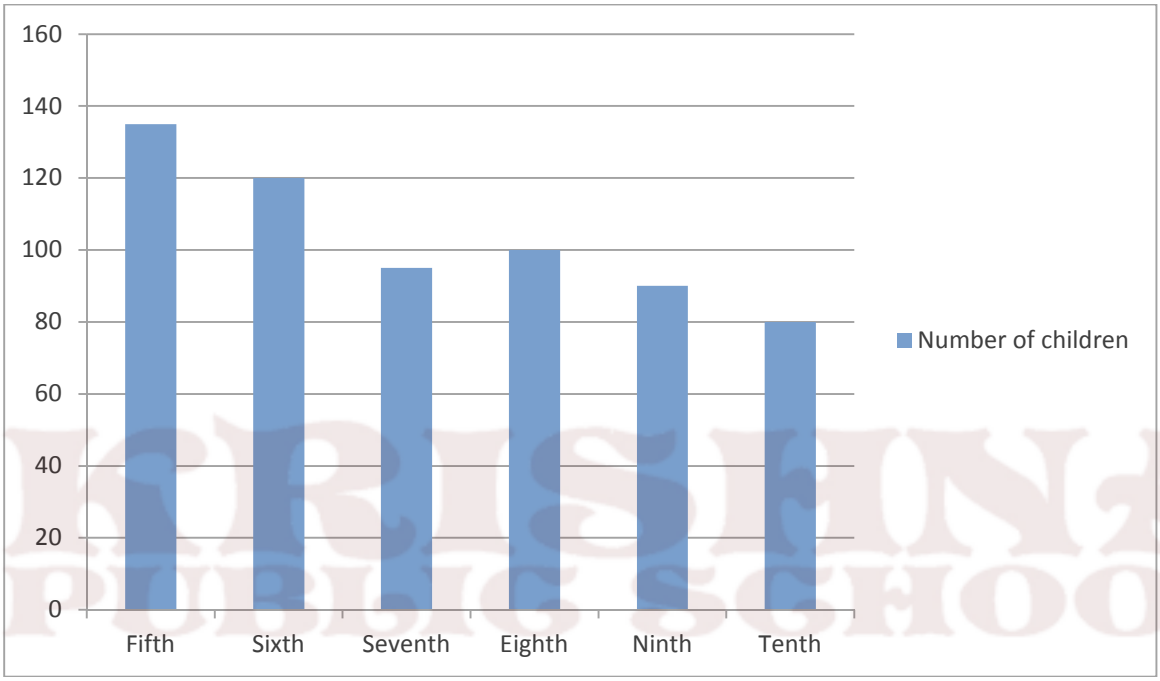
8. Find the mode of the following data:
12, 14, 12, 16, 15, 13, 14, 18, 19, 12, 14, 15, 16, 15, 16, 16, 15,
17, 13, 16, 16, 15, 15, 13, 15, 17, 15, 14, 15, 13, 15, 14

9. Number of children in six different classes are given below. Represent the data on a bar graph.

Class	**Fifth**	**Sixth**	**Seventh**	**Eighth**	**Ninth**	**Tenth**
Number of Children	135	120	95	100	90	80

Answer key:

1. a
2. b
3. c
4. d
5. Double bar graphs
6. collecting
7. 3
8. 15
9.



CBSE Worksheet-16

CLASS – VII Mathematics (Simple Equations)

Choose correct option in questions 1 to 4.

1. Write the equation for 'The sum of three times *x* and 11 is 32 '.
   a. 3x + 11 = 32 b. x + 11 = 32
   c. 3x = 32 d. x + 11 = 3

2. Raman's father's age is 5 years more than three times Raman's age. Raman's father is 44 years old. Set up an equation to find Raman's age.
   a. x + 3 = 44 b. 3x + 5 = 44
   c. x + 5 = 44 d. 3x – 5 = 44

3. What is *n* in 3*n* + 7 = 25?
   a. 7 b. 5
   c. 6 d. 8

4. What is *l* in 3*l* = 42?
   a. 2 b. 14
   c. 18 d. 12

Fill in the blanks:

5. An _____ is a condition on a variable.
6. In Equation 4x + 5 = 65, the _____ is (4*x* + 5).
7. If we add the same number to both sides of a balance equation, the balance is _____.

8. Solve the following equations:
   a. 10*p* = 100
   b. 10*p* + 10 = 100

9. Solve:
   a. 4 (*m* + 3) = 18
   b. – 2(*x* + 3) = 5

10. The sum of three times a number and 11 is 32. Find the number.

Answer key:

1. a
2. b
3. c
4. d
5. equation
6. L.H.S.
7. undisturbed
8. a. p = 10
   b. p = 9
9. a. $m = \frac{3}{2}$
   b. $x = \frac{-11}{2}$
10. 7

CBSE Worksheet-17

CLASS – VII Mathematics (Simple Equations)

Choose correct option in questions 1 to 4.

1. Write the equation for 'If you subtract 5 from 6 times a number, you get 7 '.
   a. $6x - 5 = 7$ b. $x - 5 = 7$
   c. $6x = 7$ d. $x - 5 = 4$

2. A shopkeeper sells mangoes in two types of boxes, one small and one large. A large box contains as many as 8 small boxes plus 4 loose mangoes. Set up an equation which gives the number of mangoes in each small box. The number of mangoes in a large box is given to be 100.
   a. $8m = 100$ b. $8m + 4 = 100$
   c. $m + 4 = 100$ d. $8m - 4 = 100$

3. What is p in $2p - 1 = 23$?
   a. 14 b. 13
   c. 12 d. 11

4. What is y in $8y = 36$?
   a. 2 b. 4
   c. 12 d. $\frac{9}{2}$

Fill in the blanks:

5. A _____ takes on different numerical values; its value is not fixed.
6. In Equation $4x + 5 = 65$, the _____ is 65.
7. If we subtract the same number from both sides of a balance equation, the balance is _____.

8. Solve the following equations:
   a. $\frac{p}{4} = 5$
   b. $\frac{-p}{3} = 5$

9. Solve the following equations.
   a. $2(x + 4) = 12$
   b. $3(n - 5) = 21$

10. Find a number, such that one fourth of the number is 3 more than 7.

Answer key:

1. a
2. b
3. c
4. d
5. variable
6. R.H.S.
7. undisturbed
8. a. p = 20
   b. p = -15
9. a. x = 2
   b. n = 12
10. 40

CBSE Worksheet-18

CLASS – VII Mathematics (Simple Equations)

Choose correct option in questions 1 to 4.

1. Write the equation for 'The number x is greater by 5 than 9'.
   a. $x - 5 = 9$ b. $x + 5 = 9$
   c. $5x = 9$ d. $x + 9 = 5$

2. Irfan says that he has 7 marbles more than five times the marbles Parmit has. Irfan has 37 marbles. (Take m to be the number of Parmit's marbles.) Set up an equation.
   a. $5m = 37$ b. $5m + 7 = 37$
   c. $m + 5 = 37$ d. $m + 7 = 37$

3. What is x in $4x + 5 = 65$?
   a. 13 b. 14
   c. 15 d. 16

4. What is b in $\frac{b}{2} = 6$?
   a. 4 b. 8
   c. 3 d. 12

Fill in the blanks:

5. The expressions are formed by performing operations like addition, subtraction, multiplication and division on the _____.

6. In Equation $3x + 4 = 25$, the _____ is $(3x + 4)$.

7. If we multiply both sides of the equation by the same number, the balance is _____.

8. Solve the following equations:
   a. $\frac{3p}{4} = 6$
   b. $3s = -9$

9. Solve the following equations.
   a. $3(n - 5) = -21$
   b. $3 - 2(2 - y) = 7$

10. Raju's father's age is 5 years more than three times Raju's age. Find Raju's age, if his father is 44 years old.

Answer key:

1. a
2. b
3. c
4. d
5. variables
6. L.H.S.
7. undisturbed
8. a. p = 8
   b. s = -33
9. a. n = -2
   b. y = 4
10. Raju is 13 years old

CBSE Worksheet-19

CLASS – VII Mathematics (Simple Equations)

Choose correct option in questions 1 to 4.

1. Write the equation for 'One third of a number plus 5 is 8. '.

   a. $\frac{n}{3}+5=8$ b. $\frac{n}{2}+5=8$

   c. $\frac{n}{5}+3=8$ d. $\frac{n}{3}-5=8$

2. Laxmi's father is 49 years old. He is 4 years older than three times Laxmi's age. (Take Laxmi's age to be *y* years.) Set up an equation.

   a. 3y = 49 b. 3y + 4 = 49

   c. y + 4 = 49 d. 3y – 4 = 49

3. What is *y* in 10*y* – 20 = 50?

   a. 9 b. 8

   c. 7 d. 6

4. What is *x* in $\frac{x}{3}=\frac{5}{4}$?

   a. 20 b. $\frac{12}{5}$

   c. 5 d. $\frac{15}{4}$

Fill in the blanks:

5. The _____ of an expression thus formed depends upon the chosen value of the variable.
6. In Equation 3x + 4 = 25, the _____ is 25.
7. If we divide both sides of the equation by the same number, the balance is _____.

8. Solve the following equations:

   a. 3*s* + 12 = 0

   b. 3*s* = 0

9. Solve the following equations:

   a. – 4(2 – *x*) = 9

   b. 4(2 – *x*) = 9

10. Maya, Madhura and Mohsina are friends studying in the same class. In a class test in geography, Maya got 16 out of 25. Madhura got 20. Their average score was 19. How much did Mohsina score?

Answer key:

1. a
2. b
3. c
4. d
5. value
6. R.H.S.
7. undisturbed
8. a. s = -4
   b. s = 0
9. a. $x = \frac{17}{4}$
   b. $x = \frac{-1}{4}$
10. 25

CBSE Worksheet-20

CLASS – VII Mathematics (Simple Equations)

Choose correct option in questions 1 to 4.

1. Write the equation for 'The sum of two times y and 10 is 42 '.
   a. $2y + 10 = 42$ b. $y + 10 = 42$
   c. $2x = 42$ d. $y + 11 = 3$

2. In an isosceles triangle, the vertex angle is twice either base angle. (Let the base angle be b in degrees. Remember that the sum of angles of a triangle is 180 degrees). Set up an equation.
   a. $x + 2x = 180$ b. $x + 2x + 2x = 180$
   c. $4x = 180$ d. $3x = 180$

3. What is n in $3n - 2 = 46$?
   a. 14 b. 15
   c. 16 d. 17

4. What is n in $\frac{n}{5} = \frac{7}{15}$?
   a. $\frac{3}{7}$ b. $\frac{75}{7}$
   c. 21 d. $\frac{7}{3}$

Fill in the blanks:

5. In an equation there is always an _____ sign.

6. In Equation $6x + 7 = 19$, the L.H.S. is _____.

7. If we fail to do the same mathematical operation on both sides of a balanced equation, the balance is _____.

8. Solve the following equations:
   a. $2q + 6 = 0$
   b. $2p + 6 = 12$

9. Solve the following equations.
   a. $4 + 5\ (p - 1) = 34$
   b. $34 - 5(p - 1) = 4$

10. Sachin scored twice as many runs as Rahul. Together, their runs fell two short of a double century. How many runs did each one score?

Answer key:

1. a
2. b
3. c
4. d
5. equality
6. $(6x + 7)$
7. disturbed
8. a. $q = -3$
   b. $p = 3$
9. a. $p = 7$
   b. $p = 7$
10. Sachin: 132 runs, Rahul: 66 runs

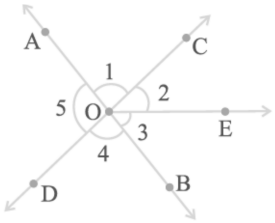
CBSE Worksheet-21

CLASS – VII Mathematics (Lines and Angles)

Choose correct option in questions 1 to 4.

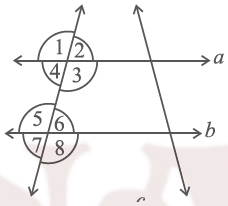
1. How many points a line segment have?
   a. 2 b. 1
   c. 3 d. 0

2. In the following figure which angle is adjacent to ∠1?
   a. ∠3 b. ∠2
   c. ∠4 d. none of these



3. If a line is a transversal to three lines, how many points of intersections are there?
   a. 1 b. 2
   c. 3 d. 4

4. State the property that is used below: If $a \parallel b$, then $\angle 1 = \angle 5$.
   a. alternate interior angles b. pair of interior angle
   c. vertically opposite angles d. corresponding angles



Fill in the blanks:

5. When the sum of the measures of two angles is 90°, the angles are called _____.

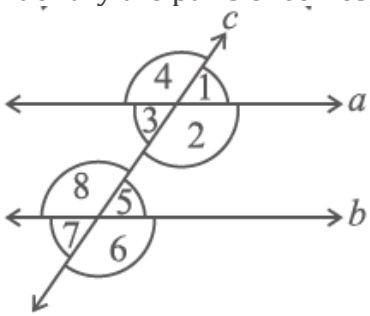
6. _____ angles have a common vertex and a common arm but no common interior points.

7. When two lines intersect, the vertically opposite angles so formed are _____.

8. Two lines *l* and m intersect if they have a point in _____.

9. When a transversal cuts two lines, such that pairs of corresponding angles are equal, then the lines have to be _____.

10. In the following figure, identify the pairs of corresponding angles.



Answer key:

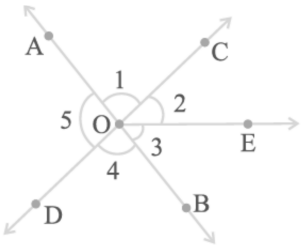
1. a
2. b
3. c
4. d
5. complementary angles
6. Adjacent
7. equal
8. common
9. parallel
10. ∠1 and ∠5, ∠2 and ∠6, ∠4 and ∠8, ∠3 and ∠7

CBSE Worksheet-22

CLASS – VII Mathematics (Lines and Angles)

Choose correct option in questions 1 to 4.

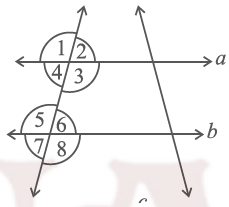
1. How many points a line have?
   a. No b. 1
   c. 2 d. 3



2. In the following figure which angle is adjacent to ∠AOC?
   a. ∠DOB b. ∠COE
   c. ∠BOE d. none of these

3. If a line is a transversal to two lines, how many points of intersections are there?
   a. 1 b. 3
   c. 2 d. 4

4. State the property that is used below. If ∠4 = ∠6, then $a \parallel b$.
   a. corresponding angles b. alternate interior angles
   c. vertically opposite angles d. pair of interior angle



Fill in the blanks:

5. Whenever two angles are complementary, each angle is said to be the _____ of the other angle.

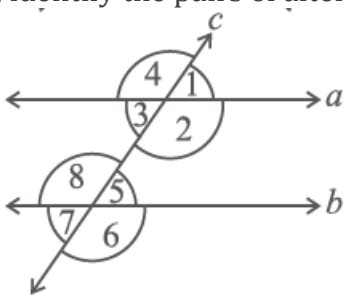
6. A _____ is a pair of adjacent angles whose non-common sides are opposite rays.

7. If we fail to do the same mathematical operation on both sides of a balanced equation, the balance is _____.

8. A line that intersects two or more lines at distinct points is called a _____.

9. When a transversal cuts two lines, such that pairs of _____are equal, the lines have to be parallel.

10. In the following figure, identify the pairs of alternate interior angles.



Answer key:

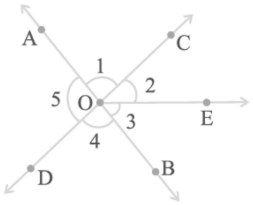
1. a
2. b
3. c
4. d
5. complement
6. linear pair
7. disturbed
8. transversal
9. alternate interior angles
10. $\angle 3$ and $\angle 5$, $\angle 2$ and $\angle 8$

CBSE Worksheet-23

CLASS – VII Mathematics (Lines and Angles)

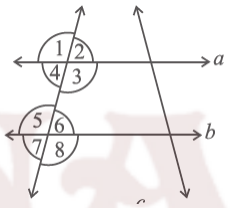
Choose correct option in questions 1 to 4.

1. How many end points a ray have?
   a. 1 b. 2
   c. 3 d. 0

2. In the following figure which angle is vertically opposite to ∠4?


   a. ∠2 b. ∠1
   c. ∠3 d. ∠5

3. If a line is a transversal to one line, how many points of intersections are there?
   a. 3 b. 2
   c. 1 d. 4

4. State the property that is used below. If ∠4 + ∠5 = 180°, then $a \parallel b$.


   a. alternate interior angles b. pair of interior angle
   c. vertically opposite angles d. corresponding angles

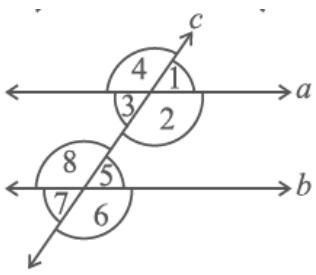
Fill in the blanks:

5. The complement of angle 30° is ___.

6. The angles in a linear pair are _____.

7. If we fail to do the same mathematical operation on both sides of a balanced equation, the balance is _____.

8. When a transversal cuts two lines, such that pairs of interior angles on the same side of the transversal are _____, the lines have to be parallel.

9. In the following figure, identify the pairs of interior angles on the same side of the transversal.


Answer key:

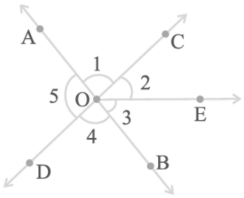
1. a
2. b
3. c
4. d
5. 60º
6. supplementary
7. disturbed
8. supplementary
9. ∠2 and ∠5, ∠3 and ∠8

CBSE Worksheet-24

CLASS – VII Mathematics (Lines and Angles)

Choose correct option in questions 1 to 4.

1. If we extend the two end points in either direction endlessly, we get a _____.
   a. line b. line segment
   c. ray d. none of these

2. In the following figure what is the vertically opposite angle of ∠5?
   

   a. ∠4 b. ∠2 + ∠3
   c. ∠2 d. ∠3

3. If two parallel lines are cut by a transversal, each pair of _____ are equal.
   a. vertically opposite angles b. alternate angles
   c. alternate interior angles d. none of these

4. What is n in $\frac{n}{5}=\frac{7}{15}$?
   a. $\frac{3}{7}$ b. $\frac{75}{7}$
   c. 21 d. $\frac{7}{3}$

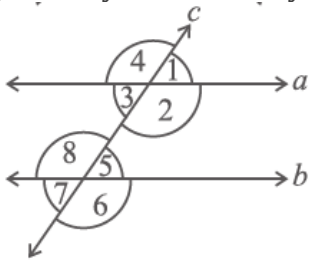
Fill in the blanks:

5. When two angles are supplementary, each angle is said to be the _____ of the other.

6. A pair of supplementary angles form a _____ when placed adjacent to each other.

7. If we fail to do the same mathematical operation on both sides of a balanced equation, the balance is _____.

8. Alternate interior angles have different vertices are on opposite sides of the _____ and lie 'between' the two lines.

9. In the following figure, identify the vertically opposite angles.
   

Answer key:

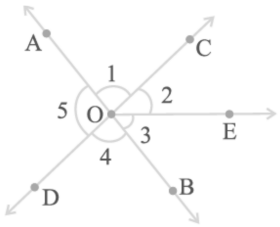
1. a
2. b
3. c
4. d
5. supplement
6. linear pair
7. disturbed
8. transversal
9. $\angle 1$ and $\angle 3$, $\angle 2$ and $\angle 4$, $\angle 5$ and $\angle 7$, $\angle 8$ and $\angle 6$

CBSE Worksheet-25

CLASS – VII Mathematics (Lines and Angles)

Choose correct option in questions 1 to 4.

1. An _____ is formed when lines or line segments meet.
   a. angle b. ray
   c. line d. line segment



2. In the following figure which angle is adjacent to ∠3?
   a. ∠5 b. ∠4
   c. ∠1 d. none of these

3. If two _____ are cut by a transversal, each pair of corresponding angles are equal in measure.
   a. lines b. intersecting lines
   c. parallel lines d. none of these

4. What is n in $\frac{n}{5}=\frac{7}{15}$?
   a. $\frac{3}{7}$ b. $\frac{75}{7}$
   c. 21 d. $\frac{7}{3}$

Fill in the blanks:

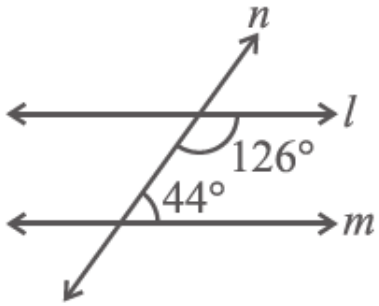
5. The supplement of angle 125º is ____.

6. Two _____ form a linear pair.

7. If we fail to do the same mathematical operation on both sides of a balanced equation, the balance is _____.

8. Parallel lines are lines on a plane that do not _____ anywhere.

9. In the given figures below, decide whether l is parallel to m.



Answer key:

1. a
2. b
3. c
4. d
5. 55º
6. right angles
7. disturbed
8. meet
9. No

CBSE Worksheet-26

CLASS – VII Mathematics (The triangle and its properties)

Choose correct option in questions 1 to 4.

1. How many altitudes can a triangle have?
   a. 3 b. 2
   c. 1 d. none of these

2. Write the side opposite to the vertex B of ΔABC.
   a. AB b. AC
   c. BC d. none of these

3. A triangle in which two altitudes of the triangle are two of its sides is _____.
   a. acute-angled triangle b. obtuse-angled triangle
   c. right-angled triangle d. none of these

4. Answer in Yes or No.
   a. Can you have a triangle with two right angles?
   b. Can you have a triangle with two obtuse angles?

Fill in the blanks:

5. A _____ is a simple closed curve made of three line segments.

6. An _____ has one end point at a vertex of the triangle and the other on the line containing the opposite side.

7. The sum of interior opposite angles is _____, when the exterior angle is right angle.

8. The sum of the lengths of any two sides of a triangle is _____ the third side.

9. An exterior angle of a triangle is of measure 70º and one of its interior opposite angles is of measure 25º. Find the measure of the other interior opposite angle.

10. Is there a triangle whose sides have lengths 10.2 cm, 5.8 cm and 4.5 cm?

Answer key:

1. a
2. b
3. c
4. a. No
   b. No
5. triangle
6. altitude
7. right angle
8. greater than
9. 45º
10. Yes

CBSE Worksheet-2

CLASS – VII Mathematics (The triangle and its properties)

Choose correct option in questions 1 to 4.

1. Write the angle opposite to the side LM of ΔLMN.
   a. angle N b. angle M
   c. angle L d. none of these

2. Write the angle opposite to the side XY of ΔXYZ.
   a. ∠X b. ∠Z
   c. ∠Y d. none of these

3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. Answer in Yes or No.
   a. Can you have a triangle with two acute angles?
   b. Can you have a triangle with all the three angles greater than 60º?

Fill in the blanks:

5. A triangle has _____ vertices, three sides and three angles.

6. Through each vertex, an _____ can be drawn.

7. A triangle in which all the three sides are of equal lengths is called an _____.

8. In an equilateral triangle all sides have _____ length.

9. The two interior opposite angles of an exterior angle of a triangle are 60º and 80º. Find the measure of the exterior angle.

10. The lengths of two sides of a triangle are 6 cm and 8 cm. Between which two numbers can length of the third side fall?

Answer key:

1. a
2. b
3. c
4. a. Yes
   b. No
5. three
6. altitude
7. equilateral triangle
8. same
9. 140º
10. The length of the third side could be any length greater than 2 and less than 14 cm.

CBSE Worksheet-28

CLASS – VII Mathematics (The triangle and its properties)

Choose correct option in questions 1 to 4.

1. Write the vertex opposite to the side RT of ΔRST.
   a. S b. R
   c. T d. none of these

2. Write the vertex opposite to the side PR of ΔPQR.
   a. P b. Q
   c. R d. none of these

3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. Answer in Yes or No.
   a. Can you have a triangle with all the three angles equal to 60º?
   b. Can you have a triangle with all the three angles less than 60º?

Fill in the blanks:

5. An _____ of a triangle is equal to the sum of its interior opposite angles.

6. The sum of the measures of the three angles of a triangle is _____.

7. In an equilateral triangle each angle has measure _____.

8. A triangle in which two sides are of equal lengths is called an _____.

9. Two angles of a triangle are 30º and 80º. Find the third angle.

10. Is it possible to have a triangle with the sides 3 cm, 6 cm and 7 cm?

Answer key:

1. a
2. b
3. c
4. a. Yes
   b. No
5. exterior angle
6. 180°
7. 60°
8. isosceles triangle
9. 70º
10. Yes

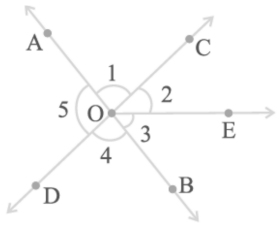
CBSE Worksheet-29

CLASS – VII Mathematics (The triangle and its properties)

Choose correct option in questions 1 to 4.

1. How many medians can a triangle have?
   a. 3 b. 2
   c. 1 d. 0

2. In the following figure which angle is adjacent to ∠3?
   a. ∠5 b. ∠4
   c. ∠1 d. none of these



3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. If the Pythagoras property holds for some triangle, will the triangle be
   a. right-angled b. acute-angled
   c. obtuse-angled d. none of these

Fill in the blanks:

5. A _____ connects a vertex of a triangle to the mid-point of the opposite side.

6. Exterior angles can be formed for a triangle in _____ ways.

7. In an isosceles triangle _____ sides have same length.

8. The sum of the lengths of any two sides of a triangle is greater than the _____.

9. One of the angles of a triangle is 80º and the other two angles are equal. Find the measure of each of the equal angles.

10. The lengths of two sides of a triangle are 12 cm and 15 cm. Between what two measures should the length of the third side fall?

Answer key:

1. a
2. b
3. c
4. a
5. median
6. many
7. two
8. third side
9. 50º, 50º
10. The length of the third side could be any length greater than 2 and less than 27 cm.

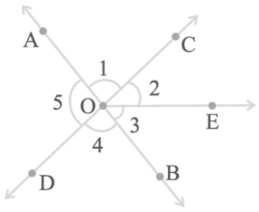
CBSE Worksheet-30

CLASS – VII Mathematics (The triangle and its properties)

Choose correct option in questions 1 to 4.

1. An _____ is formed when lines or line segments meet.
   a. angle b. ray
   c. line d. line segment

2. In the following figure which angle is adjacent to ∠3?
   a. ∠5 b. ∠4
   c. ∠1 d. none of these



3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. Determine whether the triangle whose lengths of sides are 3 cm, 4 cm, 5 cm is a _____.
   a. right-angled b. acute-angled
   c. obtuse-angled d. none of these

Fill in the blanks:

5. A median wholly lie in the _____ of the triangle.

6. The sum of an exterior angle of a triangle and its adjacent interior angle is _____.

7. In an isosceles triangle base angles opposite to the equal sides are _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. The three angles of a triangle are in the ratio 1:2:1. Find all the angles of the triangle.

Answer key:

1. a
2. b
3. c
4. a
5. interior
6. right angles
7. equal
8. hypotenuse
9. 45º, 90º, 45º

CBSE Worksheet-31

CLASS –VII Mathematics (Congruence of Triangles)

Choose correct option in questions 1 to 4.

1. ΔABC and ΔPQR are congruent under the correspondence ABC ↔RQP
Write the parts of ΔABC that correspond to RQ.
   a. AB b. BC
   c. AC d. none of these

2. Which angle is included between the sides DE and EF of ΔDEF?
   a. ∠D b. ∠E
   c. ∠F d. none of these

3. By applying SAS congruence rule, you want to establish that ΔPQR ≅ ΔFED. It is given that PQ = FE and RP = DF. What additional information is needed to establish the congruence?
   a. ∠P = ∠D b. ∠Q = ∠D
   c. ∠P = ∠F d. ∠R = ∠F

4. Which congruence criterion do you use in the following?
Given: AC = DF, AB = DE, BC = EF. So, ΔABC ≅ ΔDEF
   a. ASA rule b. SAS rule
   c. RHS rule d. SSS rule

Fill in the blanks:

5. If two line segments have the _____ length, they are congruent.

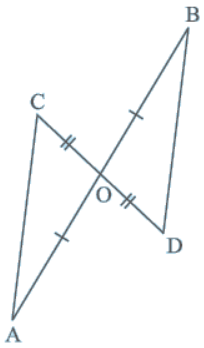
6. If two triangles are congruent, then their _____ parts(i.e., angles and sides) that match one another are equal.

7. In an isosceles triangle base angles opposite to the equal sides are _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. In triangles ABC and PQR, AB = 3.5 cm, BC = 7.1 cm, AC = 5 cm, PQ = 7.1 cm, QR = 5 cm and PR = 3.5 cm. Examine whether the two triangles are congruent or not. If yes, write the congruence relation in symbolic form.

10. In the following figure, AB and CD bisect each other at O. State the three pairs of equal parts in two triangles AOC and BOD.



Answer key:

1. a
2. b
3. c
4. a
5. equal
6. corresponding
7. equal
8. hypotenuse
9. $\Delta ABC \cong \Delta RPQ$
10. AO = BO, OC = OD and $\angle AOC = \angle BOD$

CBSE Worksheet-32

CLASS –VII Mathematics (Congruence of Triangles)

Choose correct option in questions 1 to 4.

1. ΔABC and ΔPQR are congruent under the correspondence ABC ↔RQP
Write the parts of ΔABC that correspond to PQ.
a. CB b. AB
c. AC d. none of these

2. Which angle is included between the sides AB and AC of ΔABC?
a. ∠B b. ∠A
c. ∠C d. none of these

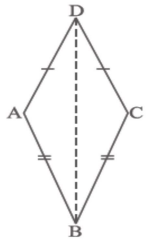
3. By applying ASA congruence rule, it is to be established that ΔABC ≅ΔQRP and it is given that BC = RP. What additional information is needed to establish the congruence?
a. AB = QR and ∠C = ∠P b. ∠B = ∠Rand ∠A = ∠Q
c. ∠B = ∠R and ∠C = ∠P d. none of these

4. Which congruence criterion do you use in the following?
Given: ZX = RP, RQ = ZY, ∠PRQ = ∠XZY. So, ΔPQR ≅ ΔXYZ
a. ASA rule b. SSS rule
c. RHS rule d. SAS rule

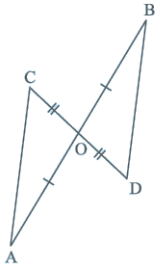
Fill in the blanks:

5. If two line segments are _____, they have the same length.
6. If two triangles are _____, then their corresponding parts(i.e., angles and sides) that match one another are equal.
7. In an isosceles triangle base angles opposite to the equal sides are _____.
8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. In the following figure, AD = CD and AB = CB. Is ΔABD ≅ ΔCBD? Why or why not?



10. In the following figure, AB and CD bisect each other at O.
Which of the following statements are true?
(a) ΔAOC ≅ ΔDOB
(b) ΔAOC ≅ ΔBOD



Answer key:

1. a
2. b
3. c
4. a
5. congruent
6. congruent
7. equal
8. hypotenuse
9. Yes, $\Delta ABD \cong \Delta CBD$ (By SSS congruence rule)
10. a. False
    b. True

CBSE Worksheet-33

CLASS –VII Mathematics (Congruence of Triangles)

Choose correct option in questions 1 to 4.

1. ΔABC and ΔPQR are congruent under the correspondence ABC ↔RQP
Write the parts of ΔABC that correspond to RP.
   a. AC b. AB
   c. BC d. none of these

2. Which angle is included between the sides QR and PR of ΔPQR?
   a. ∠P b. ∠R
   c. ∠Q d. none of these

3. What is the side included between the angles M and N of ΔMNP?
   a. MP b. NP
   c. MN d. none of these

4. Which congruence criterion do you use in the following?
Given: ∠MLN = ∠FGH, ∠NML = ∠GFH, ML = FG. So, ΔLMN ≅ ΔGFH
   a. SAS rule b. SSS rule
   c. RHS rule d. ASA rule

Fill in the blanks:

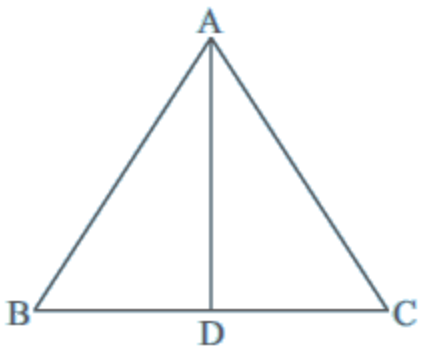
5. The relation of two objects being congruent is called _____.

6. The sum of an exterior angle of a triangle and its adjacent interior angle is _____.

7. In an isosceles triangle base angles opposite to the equal sides are _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. In the following figure, AB = AC and D is the mid-point of BC. Is ΔADB ≅ ΔADC? Give reasons.



Answer key:

1. a
2. b
3. c
4. a
5. congruence
6. right angles
7. equal
8. hypotenuse
9. Yes, $\Delta ADB \cong \Delta ADC$ (By SSS congruence criterion)

CBSE Worksheet-34

CLASS –VII Mathematics (Congruence of Triangles)

Choose correct option in questions 1 to 4.

1. An_____ is formed when lines or line segments meet.
   a. angle b. ray
   c. line d. line segment

2. You want to establish ΔDEF ≅ ΔMNP, using the ASA congruence rule. You are given that ∠D = ∠M and ∠F = ∠P. What information is needed to establish thecongruence?
   a. DF = MN b. DF = MP
   c. DE = MN d. none of these

3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. Which congruence criterion do you use in the following?
   Given: EB = DB, AE = BC, ∠A = ∠C = 90°. So, ΔABE ≅ ΔCDB
   a. SAS rule b. SSS rule
   c. ASA rule d. RHS rule

Fill in the blanks:

5. If two angles have the same measure, they are _____.

6. The sum of an exterior angle of a triangle and its adjacent interior angle is _____.

7. In an isosceles triangle base angles opposite to the equal sides are _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. The three angles of a triangle are in the ratio 1:2:1. Find all the angles of the triangle.

Answer key:

1. a
2. b
3. c
4. a
5. congruent
6. right angles
7. equal
8. hypotenuse
9. 45º, 90º, 45º

CBSE Worksheet-35

CLASS –VII Mathematics (Congruence of Triangles)

Choose correct option in questions 1 to 4.

1. ΔABC and ΔPQR are congruent under the correspondence ABC ↔ RQP
Write the parts of ΔABC that correspond to ∠P.
   a. ∠C b. ∠A
   c. ∠B d. none of these

2. Which angle is included between the sides MO and NO of ΔMNO?
   a. ∠M b. ∠O
   c. ∠N d. none of these

3. According to Pythagoras property, in a right-angled triangle, the square on the _____ = sum of the squares on the legs.
   a. right angle b. altitude
   c. hypotenuse d. none of these

4. You want to show that ΔART ≅ ΔPEN, if you have to use SSS criterion, then you need to show AR =
   a. PN b. EN
   c. ∠P d. PE

Fill in the blanks:

5. If two angles are _____, their measures are same.

6. The sum of an exterior angle of a triangle and its adjacent interior angle is _____.

7. In an isosceles triangle base angles opposite to the equal sides are _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. Given below are measurements of some parts of two triangles. Examine whether the two triangles are congruent or not, by using SAS congruence rule. If the triangles are congruent, write them in symbolic form.

   In Δ**ABC,** BC = 6 cm, AC = 4 cm, ∠B = 35° and in Δ**DEF,** DF = 4 cm, EF = 6 cm, ∠E = 35°.

Answer key:

1. a
2. b
3. c
4. a
5. congruent
6. right angles
7. equal
8. hypotenuse

9. Here, BC = EF, AC = DF and $\angle B = \angle E$.
   But $\angle B$ is not the included angle between the sides AC and BC. Similarly, $\angle E$ is not the included angle between the sides EF and DF. So, SAS congruence rule cannot be applied and we cannot conclude that the two triangles are congruent.

CBSE Worksheet-36

CLASS –VII Mathematics (Comparing quantities)

Choose correct option in questions 1 to 4.

1. The cost of one packet of balls having 20 balls is Rs. 100, what will be the cost of such 24 balls.
   a. Rs 120 b. Rs 100
   c. Rs 80 d. Rs 60

2. The cost of 9 bowls is Rs 72. Find the cost of 6 such bowls.
   a. Rs 55 b. Rs 48
   c. Rs 60 d. Rs 72

3. Out of 80 students in a class 30 are girls. Find the percentage of girls in class.
   a. 32.5% b. 28%
   c. 37.5% d. none of these

4. What percent of the total distance of 100km is 22km?
   a. 88% b. 66%
   c. 44% d. 22%

Fill in the blanks:

5. To compare two quantities, the units must be the _____.
6. $\frac{1}{3}$ **= ----%**
7. If C.P = Rs x and S.P = Rs y. Profit % is _____.
8. $\text{Profit\%} = \frac{\text{Profit}}{\text{C.P}} \times 100\%$ is true/false?
9. Find the ratio of
   a. 1m to 1 km
   b. 1 week of Feb. to Feb. month of a non leap year
10. The loss in a company has decreased from 20 lacs to 5 lacs in one year. Find the loss decrease percentage.

Answer key:

1. a
2. b
3. c
4. a
5. same
6. $33\frac{1}{3}\%$
7. Profit % = $\left(\frac{y - x}{x}\right) \times 100\%$
8. true
9. a. 1:1000
   b. 1:4
10. 75%

CBSE Worksheet-37

CLASS –VII Mathematics (Comparing quantities)

Choose correct option in questions 1 to 4.

1. A basket is full of fruits mangoes, oranges and apples. If 60% are mangoes, 10% are oranges than what is the percentage of apples.
   a. 30% b. 20%
   c. 10% d. none of these

2. Find the ratio of 40 days to 40 hrs.
   a. 1:24 b. 24:1
   c. 25:1 d. 1:25

3. There are 25 radios. 16 of them are damaged. Find the percentage of damaged radios.
   a. 60% b. 50%
   c. 64% d. none of these

4. In a survey of 40 students, 25% of students liked to play football. What is the number of students who liked to play football?
   a. 15 b. 8
   c. 12 d. 10

Fill in the blanks:

5. To compare two quantities, the _____ must be the same.
6. $\frac{1}{6}$ **= ----%**
7. A shirt with marked price Rs 1000 was sold to a customer for Rs 900. The % of decrease is _____.
8. $\text{Loss\%} = \frac{\text{Loss}}{\text{C.P}} \times 100\%$ is true/false?
9. Convert the following into fractions and decimals.
   a. $24\frac{1}{2}\%$
   b. 39.2%
10. A man buys 3 oranges for Rs. 4 and sells 4 oranges for Rs. 6. Find his Gain or loss per cent.

Answer key:

1. a
2. b
3. c
4. a
5. units
6. $16\frac{2}{3}\%$
7. 10%
8. True
9. a. $24\frac{1}{2}\% = \frac{49}{2} \times \frac{1}{100} = \frac{49}{200} or 0.245$

   b. $39.2\% = 39.2/100 = 0.392$
10. 12.5%

CBSE Worksheet-38

CLASS –VII Mathematics (Comparing quantities)

Choose correct option in questions 1 to 4.

1. In a village, 30% people are women, 40% are men rest are Children what is the percentage of children in the village.
   a. 30% b. 20%
   c. 10% d. none of these

2. The population of Rajasthan is 570 lakh and population of U.P is 1,560 lakh in the same area. Find the ratio of their population.
   a. 1:3 b. 19:52
   c. 19:55 d. none of these

3. Find 3% of 1hr in seconds.
   a. 36 sec b. 72 sec
   c. 108 sec d. none of these

4. In a village, 30% people are women, 40% are men rest are Children. What is the % of children in the village?
   a. 5% b. 10%
   c. 20% d. 30%

Fill in the blanks:

5. The ratio of 3 km to 300 m is _____.

6. 35% + _____ % = 100%

7. The number of illiterate persons in a country decreased from 150 lakhs to 100 lakhs in 10 yrs. The decrease percentage is _____.

8. The side opposite to the right angle is called the _____ of the right-angled triangle.

9. Calculate the following:
   a. 12% of 1200
   b. 30% of 300

10. Out of 30 students in a hostel, 8 are going to market, 20 are going to watch T.V, rest of the students are studying. Convert all of them into percentages.

Answer key:

1. a
2. b
3. c
4. a
5. 10:1
6. 65
7. 33.3%
8. hypotenuse
9. a. 144
   b. 90
10. Percentage of student going to market = $\frac{4}{15} \times 100 = \frac{80}{3}$ or $26\frac{2}{3}\%$

    Percentage of students watching T.V = $\frac{2}{3} \times 100 = \frac{200}{3} = 66\frac{2}{3}\%$

    Percentage of students studying = $\frac{1}{15} \times 100 = \frac{20}{3}$ or $6\frac{2}{3}\%$

CBSE Worksheet-39

CLASS –VII Mathematics (Comparing quantities)

Choose correct option in questions 1 to 4.

1. Find the ratio of Rs 500 to 50,000 paise.
   a. 1:1 b. 1:2
   c. 1:3 d. 1:4

2. Neelu got 320/400 in her report card. Hari scored 280/400 in his report card. Who scored more percentage of marks?
   a. Hari b. Neelu
   c. Riru d. none of these

3. Find the whole quantity if 5% of it is 600.
   a. 8000 b. 10000
   c. 12000 d. none of these

4. You want to show that ΔART ≅ ΔPEN, if you have to use SSS criterion, then you need to show AR =
   a. PN b. EN
   c. ∠P d. PE

Fill in the blanks:

5. The ratio of 5 m to 50 cm is _____.

6. 0.6 % expressed as fraction is _____.

7. The cost of a flower vase is Rs 120. If the shopkeeper sells it at a loss of 10%, the selling price is _____.

8. The Difference between the principal and amount is said to be the _____.

9. Find out the numbers if
   a. 10% of number is 600
   b. 12% of number is 1080

10. A person divides his income in three equal parts if he gives 2 parts to Ram and 1 part to Shyam. What percentage of money he gives to Ram and Shyam separately.

Answer key:

1. a
2. b
3. c
4. a
5. 10:1
6. $\frac{6}{1000}$
7. Rs 108
8. interest
9. a. 6000
   b. 9000
10. Ram's part $= \frac{2}{3} \times 100 = 66\frac{2}{3}\%$

    Shyam's part $= \frac{1}{3} \times 100 = 33\frac{1}{3}\%$

CBSE Worksheet-40

CLASS –VII Mathematics (Comparing quantities)

Choose correct option in questions 1 to 4.

1. The weight of one iron ball is 16 kg. Find the weight of 8 such iron balls.
   a. 128 kg b. 120 kg
   c. 100 kg d. 84 kg

2. Write 3/4 in the form of percentage.
   a. 100% b. 75%
   c. 50% d. 25%

3. Convert 45% into fraction.
   a. $\frac{20}{9}$ b. $\frac{1}{20}$
   c. $\frac{9}{20}$ d. none of these

4. The cost of one packet of balls having 20 balls is Rs. 100, what will be the cost of such 24 balls.
   a. Rs 80 b. Rs 100
   c. Rs 60 d. Rs 120

Fill in the blanks:

5. The ratio of Rs 3 to 30 paise is _____.
6. The two ratios 2/5 and 3/8 are _____.
7. S.P of a toy is Rs 540. If the profit made by the shopkeeper is 20%, the C.P of the toy is _____.
8. The sum of the Simple interest and the principal gives the _____ .

9. Total numbers of beads in a bag are 20, if red beads are 8 and blue beads are 12, find out the percentage of each colour of beads.

10. A shopkeeper sells an article of ₹400, while he purchases it for ₹ 402. Find out loss per cent of shopkeeper.

Answer key:

1. a
2. b
3. c
4. a
5. 10:1
6. not equal
7. Rs 450
8. amount
9. 60%
10. 0.49%

CBSE Worksheet-41
CLASS –VII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Rewrite $\frac{-44}{72}$ in the simplest form.

   a. $\frac{-11}{18}$ b. $\frac{-18}{11}$ c. $\frac{-11}{19}$ d. $\frac{-11}{20}$

2. Sum of two rational numbers is –8, one number is $\frac{3}{4}$, find other.

   a. $\frac{-4}{35}$ b. $\frac{-35}{4}$ c. $\frac{35}{4}$ d. $\frac{4}{35}$

3. Which of the rational number is positive?

   a. 9/-15 b. -2/3 c. 3/7 d. -4/13

4. Write the rational number whose numerator is 4 × (– 7) and denominator is (3 –7) × (15 – 11).

   a. $\frac{16}{28}$ b. $\frac{8}{13}$ c. $\frac{13}{8}$ d. $\frac{28}{16}$

Fill in the blanks with the correct symbol out of >, < and =.

5. $\frac{-1}{3}$ ___ $\frac{-1}{4}$

6. 0 ____ $\frac{-7}{6}$

7. $\frac{5}{-11}$ ____ $\frac{-5}{11}$

8. Do $\frac{4}{-9}$ and $\frac{-16}{36}$ represent the same rational numbers?

9. Write the following rational numbers in ascending order: $\frac{-3}{7}, \frac{-3}{2}, \frac{-3}{4}$

10. Simplify: $\frac{13}{4}+\frac{-12}{5}+\frac{-3}{4}+\frac{2}{3}+\frac{-3}{5}+\frac{4}{3}$.

11. From his home, Rahul walks 6/7 km towards school and then returns 5/6 km on the same way towards his home to reach a landmark. Where will he be now from his home?

Answer key:

1. a
2. b
3. c
4. a
5. <
6. >
7. =
8. yes
9. $\frac{-3}{2} < \frac{-3}{4} < \frac{-3}{7}$
10. $\frac{3}{2}$
11. 1/42 km

CBSE Worksheet-42

CLASS –VII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Find the reciprocal of $\frac{-1}{3}\times\frac{-15}{6}$.

   a. $\frac{6}{5}$ b. $\frac{5}{6}$

   c. $\frac{1}{5}$ d. $\frac{4}{5}$

2. Product of two rational numbers is $\frac{-8}{9}$, one is $\frac{-10}{3}$, find other.

   a. $\frac{-4}{15}$ b. $\frac{4}{15}$

   c. $\frac{15}{4}$ d. $\frac{-15}{4}$

3. Reduce (-63)/99 to the standard form.

   a. 11/7 b. 7/11

   c. -7/11 d. none of these

4. Write the rational number whose denominator is the smallest 2 digit number and the numerator is the greatest 3 digit number.

   a. 9/10 b. 99/10

   c. 99 d. 999/10

Fill in the blanks:

5. A rational number is defined as _____.
6. The rational number 9/1 integer is ____.
7. Numerator of $5\frac{3}{4}$ is .....
8. (-3)/5 as a rational number with denominator 15 is _____ .
9. Find out two rational numbers between -3/4 and 0.
10. Simplify: $\left[\frac{2}{3}\times\frac{-5}{4}\right]+\left[\frac{-10}{3}\times\frac{5}{2}\right]-\left[\frac{-16}{3}\times\frac{-55}{32}\right]$.
11. Mayank reads 1/3 of a storybook on the first day and 1/4 of the book on the second day. What part of the story book is yet to be read by Mayank?

Answer key:

1. a
2. b
3. c
4. a
5. A number that can be expressed in the form (p/q), where p and q are integers and q ≠ 0.
6. 9
7. 23
8. -9/15
9. $\frac{-2}{4}$ and $\frac{-1}{4}$
10. $-18\frac{1}{3}$
11. 5/12 part

CBSE Worksheet-43

CLASS –VII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Subtract $\frac{-1}{2}$ from $\frac{4}{5}$.

   a. $\frac{13}{10}$ b. $\frac{10}{13}$

   c. $\frac{10}{15}$ d. $\frac{11}{13}$

2. Write 3/4 in the form of percentage.

   a. 100% b. 75%

   c. 50% d. 25%

3. Find x such that (-3)/7 and x/(-21) are equivalent rational numbers.

   a. 11 b. 13

   c. 9 d. none of these

4. Identify the smallest rational number.

   a. -9/12 b. 8/-9

   c. 2/3 d. 5/-6

Fill in the blanks:

5. The integer -8 as rational number is _____.
6. The two ratios 2/5 and 3/8 are _____.
7. The product of a rational number with its reciprocal is always ……
8. Arrange the following in ascending order: $\frac{-3}{4}, \frac{7}{-9}$ and $\frac{11}{-13}$.
9. Show that the values of $\frac{8}{15}-\frac{7}{10}$ *and* $\frac{7}{10}-\frac{8}{15}$ are different? State the property which is not satisfied?
10. Simplify: $\frac{10}{13}\times\frac{26}{15}+\frac{13}{25}\times\frac{10}{13}$.
11. Seema spends 3/4 of her pocket money. She spends 1/2 of it on a book, 1/6 on a movie and the remaining amount on a dress. What part of her pocket money did she spend on the dress?

Answer key:

1. a
2. b
3. c
4. b
5. -8/1
6. not equal
7. 1
8. $\frac{11}{-13} < \frac{7}{-9} < \frac{-3}{4}$
9. commutative property
10. $1\frac{11}{15}$
11. 1/12 part

CBSE Worksheet-44

CLASS –VII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Write down the additive inverse of $\frac{3}{7}$.

   a. $-\frac{3}{7}$ b. $\frac{4}{7}$

   c. $\frac{7}{3}$ d. $\frac{7}{4}$

2. Write 3/4 in the form of percentage.

   a. 100% b. 75%

   c. 50% d. 25%

3. Identify the greatest rational number.

   a. 450/-7 b. -3/21

   c. 5/7 d. 29/14

4. Find the product of $\frac{-3}{5}\times\frac{35}{7}\times\frac{-1}{6}$.

   a. 1/3 b. 1/5

   c. 1/4 d. 1/2

Fill in the blanks:

5. The ratio of Rs 3 to 30 paise is _____.

6. The two ratios 2/5 and 3/8 are ____.

7. $\frac{7}{5}+\ldots\ldots\ldots=\frac{7}{3}$

8. Give four rational numbers equivalent to $\frac{-2}{7}$.

9. Write three more numbers in the following pattern: $\frac{1}{2},\frac{2}{4},\frac{3}{6},\frac{4}{8},\ldots$

10. A shopkeeper sells an article of ₹400, while he purchases it for ₹ 402. Find out loss per cent of shopkeeper.

11. If 35 shirts of equal size can be stitched from 49/2 metres of cloth, what is the length of the cloth required for each shirt? Find the length of cloth required for 4 shirts of equal size.

Answer key:

1. a
2. b
3. c
4. a
5. 10:1
6. not equal
7. 14/15
8. - 4/7, - 6/21, - 8/28, - 10/35
9. $\frac{5}{10}, \frac{6}{12}, \frac{7}{14}$
10. 0.49%
11. 2.8 m

CBSE Worksheet-45

CLASS –VII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Write down the additive inverse of $\frac{-4}{9}$.

   a. $\frac{4}{9}$ b. $\frac{-9}{4}$

   c. $\frac{9}{4}$ d. $\frac{-5}{9}$

2. Write 3/4 in the form of percentage.

   a. 100% b. 75%

   c. 50% d. 25%

3. $\frac{-6}{13}-(\frac{-7}{15})=?$

   a. 195 b. 1/200

   c. 1/195 d. none of these

4. Sum of two rational numbers is -8, one of them is 3/4, find the other number.

   a. 4/35 b. 35/4

   c. -4/35 d. -35/4

Fill in the blanks:

5. The ratio of Rs 3 to 30 paise is _____.

6. The two ratios 2/5 and 3/8 are ____.

7. There are _____ number of rational numbers between two rational numbers.

8. List four rational numbers between -2 and -1.

9. Find the sum of $13\frac{3}{4}+(-11\frac{1}{2})$.

10. Find out six rational numbers between $\frac{-5}{3}$ and $\frac{2}{3}$.

11. Romila, Pooja and Swati went out for dinner in a hotel. Romila paid 1/3 of the bill, Pooja paid 1/5 of the bill. Swati paid the remaining part of the bill. What part of the bill was paid by Swati?

Answer key:

1. a
2. b
3. c
4. a
5. 10:1
6. not equal
7. unlimited
8. -9/5, -8/5, -7/5, -6/5
9. $2\frac{1}{4}$
10. $\frac{-4}{3}, \frac{-3}{3}, \frac{-2}{3}, \frac{-1}{3}, \frac{0}{3}, \frac{1}{3}$
11. 7/15 part

CBSE Worksheet-46

CLASS –VII Mathematics (Practical Geometry)

1. Construct an isosceles triangle PQR where the non-equal side PQ = 4.2 cm and base angles are 30° each.

2. If ΔABC exactly coincides with ΔPQR then triangles are_____.

3. In ΔABC, BC = CA. Which of its two angles are equal?

4. If AB = QP, AC = QR, BC= PR, then ΔABC ≅ ΔQPR, state the congruence criterion involved here.

5. State true or false: The total measure of all the three angles of a triangle is 360°.

6. If we have PQ = 5 cm, ∠PQR= 115° and ∠QRP = 30°, can we construct a ΔPQR with these measurements?

7. Draw a triangle LMN, in which MN= 6cm, ML= 4.5 cm and angle M = 30°.

8. Construct a right triangle PQR in which ∠Q = 90°, PR = 6 cm and QR = 4 cm.

Answer key:

2. congruent
3. $\angle A = \angle B$
4. SSS
5. False
6. Yes

CBSE Worksheet-47

CLASS –VII Mathematics (Practical Geometry)

1. Construct a right angled triangle ABC where AB = 4.5 cm, AC = 5.8 cm and $\angle A = 90°$.

2. In triangle DEF $\angle E = \angle F$. Which of its two sides are equal?

3. State true or false: In ΔABC, the side included between $\angle B$ and $\angle C$ is AB.

4. We have PQ = 4 cm, PR= 3 cm and QR = 8 cm. Can a triangle with these measurements be possible?

5. In a triangle ABC if AB = 3 cm, AC = 5 cm and $\angle B = 30°$. Can we draw this triangle uniquely?

6. Construct a ΔABC, in which $\angle B = 70°$, AB = 4.8 cm and BC = 5.2 cm.

7. Draw a line, say AB, take a point C outside it. Through C, draw a line parallel to AB using ruler and compasses only.

Answer key:

2. DE = DF
3. False
4. No, because 4+3< 8
5. No, because point C cannot be located uniquely.

CBSE Worksheet-48

CLASS –VII Mathematics (Practical Geometry)

1. In ΔPQR with PQ = 4 cm, QR = 3.5 cm and PR = 4 cm. What type of triangle is this?

2. Construct an isosceles triangle ABC such that AB = BC = 4 cm ∠BAC = 60°.

3. In ΔPQR, QP = QR. If ∠P = 36°, what is the measure of ∠Q?

4. Construct ΔABC in which AB = 6 cm, BC = 3.5 cm and CA = 5 cm.

5. Draw a line, say AB, take a point C outside it. Through C, draw a line parallel to AB using a ruler and compass only.

6. Construct ΔPQR if PQ = 5 cm, ∠PQR = 105° and ∠QRP = 40°.

Answer key:

1. Isosceles triangle

CBSE Worksheet-49

CLASS –VII Mathematics (Practical Geometry)

1. Construct a right-angled triangle whose hypotenuse is 6 cm long and one of the legs is 4 cm long.

2. Draw a line *l*. Draw a perpendicular to *l* at any point on *l*. On this perpendicular choose a point X, 4 cm away from *l*. Through X, draw a line *m* parallel to *l*.

3. If all the three angles of a triangle are of the same measure, find the measure of each of the angles.

4. Construct ΔXYZ in which XY = 4.5 cm, YZ = 5 cm and ZX = 6 cm.

5. Construct an isosceles triangle ABC such that AB = AC = 5 cm and $\angle A = 60°$.

Answer key:

3. 60°

CBSE Worksheet-50

CLASS –VII Mathematics (Practical Geometry)

1. Examine whether you can construct ΔDEF such that EF = 7.2 cm, ∠E = 110° and ∠F = 80°. Justify your answer.

2. Construct a triangle ABC, given that AB = 5 cm, BC = 6 cm and AC = 7 cm.

3. Construct ΔLMN, right-angled at M, given that LN = 5 cm and MN = 3 cm.

4. Construct an isosceles triangle ABC such that AC= CB, AB = 6 cm and base angle = 45°.

5. Construct an isosceles triangle in which the lengths of each of its equal sides is 6.5 cm and the angle between them is 110°.

Answer key:

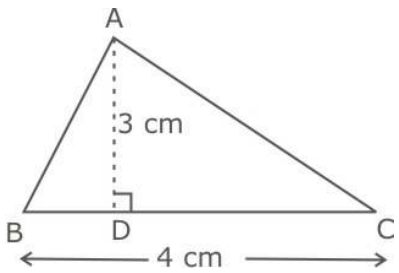
1. Not possible, because $\angle E + \angle F = 110° + 80° = 190°$

CBSE Worksheet-51

CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

1. Find the area of following triangle:



a. 6 cm^2 b. 5 cm^2

c. 4 cm^2 d. 3 cm^2

2. A door frame of dimensions 4 m × 5 m is fixed on the wall of dimension 11 m ×11 m. Find the total labour charges for painting the wall if the labour charges for painting 1m^2 of the wall is Rs 2.50.

a. Rs. 200 b. Rs. 252.50

c. Rs. 300 d. Rs. 350

3. What is the circumference of a circle of diameter 10cm?

a. 30 cm b. 35 cm

c. 31.4 cm d. none of these

4. Find the breadth of a rectangular plot of land, if its area is 440 m^2 and the length is 22m.

a. 5 m b. 10 m

c. 15 m d. 20 m

Fill in the blanks:

5. The _____ is the distance around a given two-dimensional object.

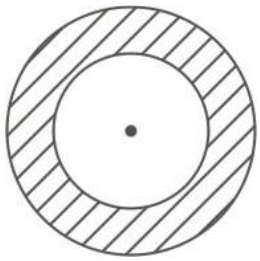
6. If we cut a square along one of its diagonals, two triangles are obtained. Area of each triangle obtained = _____.

7. $\text{Length of rectangle} = \frac{?}{\text{Breadth of rectangle}}$

8. State true of false: All triangles equal in area are congruent.

9. A rectangular garden is 65 cm long and 50 cm wide. Two cross paths each 2 m wide are to be constructed parallel to the sides. If these paths pass through the centre of the garden, find the cost of constructing the paths at the rate Rs. 69 per m^2.

10. The figure given below, shows two circles with the same centre. The radius of the larger circle is 10 cm and the radius of the smaller circle is 4 cm.
    Find:
    a. the area of the larger circle,
    b. the area of the smaller circle,
    c. the shaded area between the two circles. (Take $\pi = 3.14$)



11. A wire is in the shape of a square of side 10 cm. If the wire is rebent into a rectangle of length 12 cm, find its breadth. Which encloses more area – the square or the rectangle?

Answer key:

1. a
2. b
3. c
4. a
5. perimeter
6. ¼ × Area of the square
7. Area of rectangle
8. False
9. Rs. 15594
10. a. Area of larger circle = 314cm^2
    b. Area of smaller circle = 50.24cm^2
    c. Area of shaded region = (314 – 50.24) cm^2 = 263.76 cm^2
11. Area of square is greater than the area of rectangle

CBSE Worksheet-52
CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

1. The length and breadth of a rectangular field is 10 cm and 6 cm respectively. Find the perimeter of the field.
   a. 32 cm b. 28 cm
   c. 24 cm d. 20 cm

2. A door frame of dimensions 4m × 5m is fixed on the wall of dimension 11m × 11m. Find the total labour charges for painting the wall if the labour charges for painting 1m^2 of the wall is Rs 2.50.
   a. Rs. 200.50 b. Rs. 252.50
   c. Rs. 300 d. Rs. 350.50

3. Find the area of a circle of radius 15 cm.
   a. 599.5 cm^2 b. 695 cm^2
   c. 706.5 cm^2 d. none of these

4. If the area of a rectangular plot of land is 440 m^2 and the length is 22 m. Find its perimeter.
   a. 48 m b. 60 m
   c. 72 m d. 84 m

Fill in the blanks:

5. _____ is a quantity expressing the two-dimensional size of a defined part of a surface, typically a region bounded by a closed curve.
6. If we cut a parallelogram along one of its diagonals, we obtain two triangles. These triangles are equal in area because _____.
7. $\text{Height of parallelogram} = \frac{?}{\text{Base of parallelogram}}$

8. State true of false: The distance around a circular region is known as area of that circle.

9. A rectangular garden is 90 m long and 75 m broad. A path 5 m wide is to be built out around it. Find the area of the path.

10. The area of a square and a rectangle are equal. If the side of the square is 40 cm and the breadth of the rectangle is 25 cm, find the length of the rectangle. Also, find the perimeter of the rectangle.

11. Anand took a wire of length 44 cm and bent it into the shape of a circle. Find the radius of that circle. Also, find its area. If the same wire is bent into the shape of a square, what will be the length of each of its sides? Which figure encloses more area – the circle or the square?

Answer key:

1. a
2. b
3. c
4. a
5. Area
6. they are congruent
7. Area of parallelogram
8. False
9. 1750 m^2
10. 178 cm
11. Area of the circle is more than the area of the square

CBSE Worksheet-53

CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

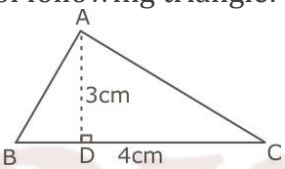
1. A rectangle's length is (2x + 1) cm and its width is (2x – 1) cm. If its area is 15 cm^2, find the value of x?

   a. 2 cm b. 3 cm
   c. 4 cm d. 5 cm

2. The length and breadth of a rectangular field is 10 cm and 6 cm respectively. What will be its area?

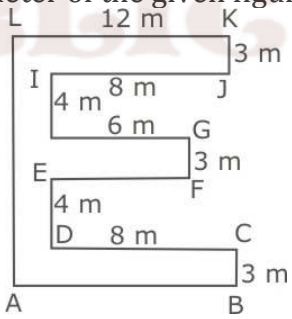
   a. 50 cm^2 b. 60 cm^2
   c. 70 cm^2 d. 80 cm^2

3. Find the area of following triangle:



   a. 8 cm^2 b. 7 cm^2
   c. 6 cm^2 d. none of these

4. Find the perimeter of the given figure.



   a. 35 m b. 80 m
   c. 94 m d. 86 m

Fill in the blanks:

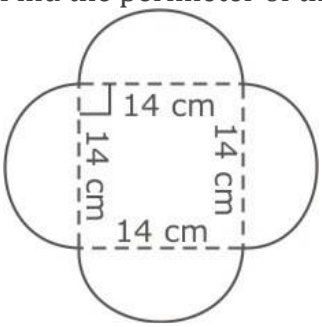
5. Perimeter of a regular polygon = _____ × Length of each side

6. The formula to find area of circle _____.

7. If we cut a parallelogram along one of its diagonals, we obtain two triangles. These triangles are equal in area because _____.

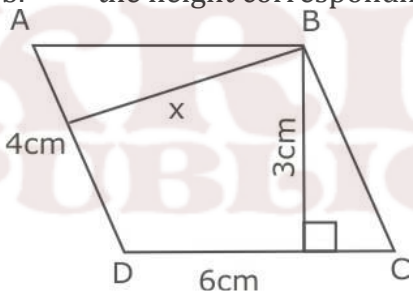
8. State true or false: Any side of the parallelogram can be chosen as base of the parallelogram.

9. Find the perimeter of the given shape.



10. The length & breadth of a rectangle are 23 cm & 11 cm respectively. Find he area of the triangles formed by joining one of its diagonals.

11. The two sides of the parallelogram ABCD are 6 cm and 4 cm. The height corresponding to the base CD is 3 cm, as shown in figure.
Find the
    a. area of the parallelogram
    b. the height corresponding to the base AD.



Answer key:

1. a
2. b
3. c
4. a
5. Number of sides in the polygon
6. πr^2
7. they are congruent
8. True
9. 88 cm
10. 126.5 cm^2
11. a. 18 cm^2
    b. 4.5 cm

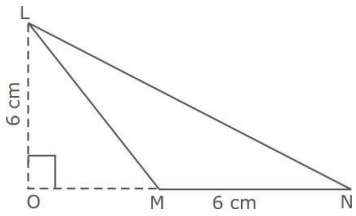
CBSE Worksheet-54
CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

1. A rectangle has a length of 6 cm and diagonal 10 cm, find the width of the rectangle?
   a. 8 cm b. 16 cm
   c. 9 cm d. 12 cm

2. Write 3/4 in the form of percentage.
   a. 100% b. 75%
   c. 50% d. 25%

3. Find the area of the triangle:

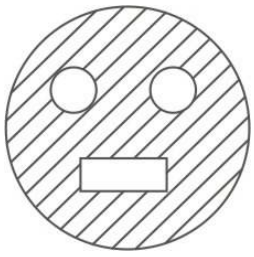


   a. 14 cm^2 b. 16 cm^2
   c. 18 cm^2 d. none of these

4. A rectangular field has dimensions 84 m by 37 m. Find the cost of fencing its boundary at the cost of Rs 2.50/m. What will be the cost of digging the entire field at the cost of Rs 15/m^2.
   a. Rs 40,620 b. Rs 66,620
   c. Rs 50,620 d. Rs 46,620

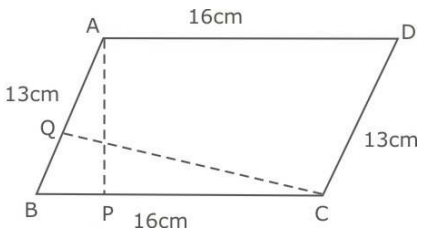
Fill in the blanks:

5. One – fourth of the perimeter of a square gives the _____.
6. 1 cm^2= _____ m^2.
7. Area of parallelogram = _____.
8. **State true or false:** If we cut a rectangle along its one diagonal, we get two triangles. If we cut it along both of its diagonals, we get four triangles.
9. From a circular card sheet of radius 14 cm, two circles of radius 3.5 cm and a rectangle of length 3 cm and breadth 1 cm are removed (as shown in the figure). Find the area of the remaining sheet. (Take $\pi = 22/7$)



10. The side of a square is 4 cm. Find the area of the triangles formed by joining all of its diagonals.

11. The sides of the parallelogram ABCD are 16 cm and 13 cm. If AP & CQ are respectively perpendicular to BC and AB; find AP and CQ .The area of parallelogram is 1040 cm^2.



Answer key:

1. a
2. b
3. c
4. a
5. side of the square
6. 0.0001
7. Base × Height
8. True
9. 536 cm^2
10. 4 cm^2
11. AP = 65 cm, CQ = 80 cm

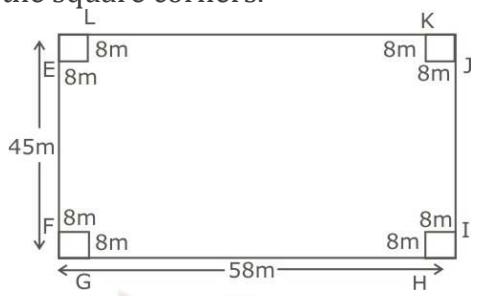
CBSE Worksheet-55

CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

1. If the area of the rectangle is 105 cm^2. Its length is (4x – 5) cm and breadth is (2x – 5) cm, find the perimeter?
   a. 44 cm b. 55 cm
   c. 33 cm d. 66 cm

2. A field has four square corners as shown in the figure. Find the perimeter excluding the square corners.



   a. 106 m b. 206 m
   c. 300 m d. 405 m

3. How many times a wheel of radius 28 cm must rotate to go 352 m?
   a. 100 Times b. 300 Times
   c. 200 Times d. none of these

4. A rectangle has a length that is 2 less than 3 times the width. If the area of the rectangle is 16 cm^2, find the dimensions.
   a. Length = 6 cm, width = 4 cm b. Length = 6cm, width = 5 cm
   c. Length = 6cm, width = 3 cm d. Length = 6 cm, width = $2\frac{2}{3}cm$

Fill in the blanks:

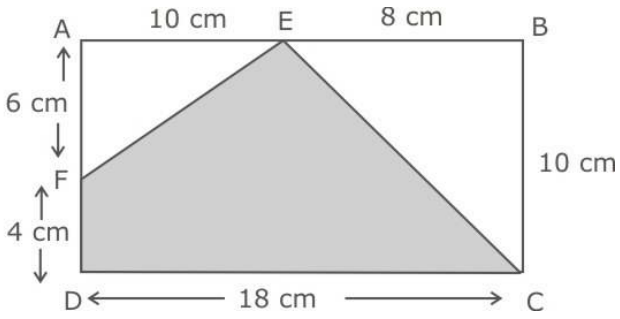
5. 1 m^2 = _____ cm^2

6. Area of a square = _____

7. 50 cm^2 = _____ mm^2

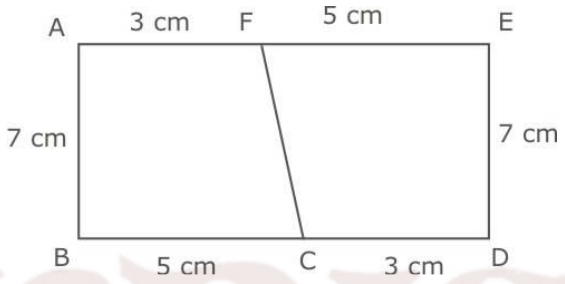
8. **State true or false:** The distance around a circular region is known as area of that circle.

9. In the following figure, find the area of shaded portion:

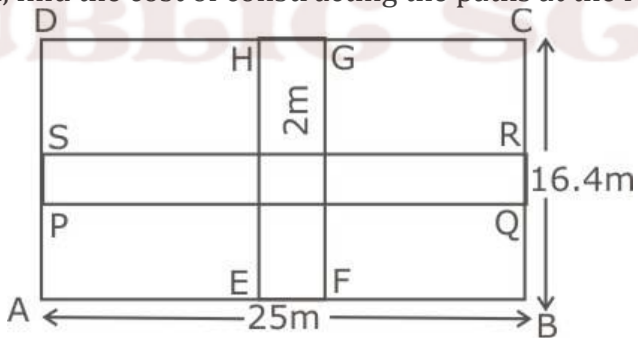


.

10. Find the area of the rectangle and of its congruent parts shown in the figure:



11. A rectangular garden is 65 long and 50 cm wide. Two cross paths each 2 m wide are to be constructed parallel to the sides. If these paths pass through the centre of the garden, find the cost of constructing the paths at the rate Rs 69 per m^2.



Answer key:

1. a
2. b
3. c
4. a
5. 10000
6. side × side
7. 5000
8. False
9. 110 cm^2
10. 28 cm^2
11. Rs 15594

CBSE Worksheet-56

CLASS –VII Mathematics (Perimeter and Area)

Choose correct option in questions 1 to 4.

1. Multiply 2a and 3a.
   a. $6a^2$ b. $5a^2$
   c. a^2 d. $12a^2$

2. Get the algebraic expressions for subtraction of z from y.
   a. $y + z$ b. $y - z$
   c. $y \times z$ d. y/z

3. Find the value of x + 4 for x = 2.
   a. 2 b. 4
   c. 6 d. 8

4. Find the product of $(2x + 3y)(2x + 3y)$.
   a. $5x^2 + 9y^2 + 12xy$ b. $4x^2 + 7y^2 + 12xy$
   c. $4x^2 + 9y^2 + 13xy$ d. $4x^2 + 9y^2 + 12xy$

Fill in the blanks:

5. When terms have the same algebraic factor, they are called _____.
6. An expression which contains two unlike terms is called _____.
7. A _____ can take various values.

8. Find the product: $\left(\frac{2}{3}xyz\right)\left(\frac{3}{4}x^2y^2z^2\right)\left(\frac{4}{5}x^3y^3z^3\right)$.

9. Simplify these expressions and find their values, if $x = 3$, $a = -1$, $b = -2$.
   a. $3x - 5a - x^2 + 9b$
   b. $2b - 8x + 4x^2 + 4a$

10. Simplify combining like terms:
    a. $3a - 2b - ab - (a - b + ab) + 3ab + b - a$
    b. $5x^2y - 5x^2 + 3yx^2 - 3y^2 + x^2 - y^2 + 8xy^2 - 3y^2$

11. What should be taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $-x^2 - y^2 + 6xy + 20$?

Answer key:

1. a
2. b
3. c
4. a
5. like terms
6. binomial
7. variable
8. $\frac{2}{5}x^6y^6z^6$
9. a. -13
   b. 4
10. a. $a + ab$
    b. $8x^2y + 8xy^2 - 4x^2 - 7y^2$
11. $4x^2 - 3y^2 - xy$

CBSE Worksheet-57

CLASS –VII Mathematics (Algebraic Expression)

Choose correct option in questions 1 to 4.

1. Multiply 3x and 4x.
   a. $12x^2$ b. x^2
   c. $6x^2$ d. $7x^2$

2. Get the algebraic expressions using variables, constants and arithmetic operations. Subtraction of p from q
   a. p – q b. q – p
   c. pq d. p/q

3. Find the value of $100 - 10x^3$ for x = 2.
   a. 10 b. 30
   c. 20 d. none of these

4. Find the product of $(3x - 5y)(3x - 5y)$.
   a. $16x^2 + 25y^2 - 30xy$ b. $9x^2 + 36y^2 - 30xy$
   c. $9x^2 + 25y^2 - 25xy$ d. $9x^2 + 25y^2 - 30xy$

Fill in the blanks:

5. When terms have different algebraic factor, they are called _____.
6. An expression which contains one term is called _____.
7. The _____ of an algebraic expression depends on the values of the variables forming the expression.

8. Find the product: $\left(2x - \frac{1}{2}y\right)\left(\frac{3}{4}x - 10y + 8\right)$.

9. Simplify these expressions and find their values, if $x = 3$, $a = -1$, $b = -2$.
   a. $3a + 5 - 8x + 1$
   b. $10x - 3b - 4a - 5b^2$

10. Add:
    a. $14x + 10y - 12xy - 13$, $18 - 7x - 10y + 8xy$, $4xy$
    b. $5m - 7n$, $3n - 4m + 2$, $2m - 3mn - 5$

11. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?

Answer key:

1. a
2. b
3. c
4. a
5. unlike terms
6. monomial
7. value
8. $\frac{3}{2}x^2 + 5y^2 - \frac{163}{8}xy + 16x - 4y$
9. a. -20
   b. 20
10. a. $7x + 5$
    b. $3m - 4n - 3mn - 3$
11. $x^2 + 2xy - y^2$

CBSE Worksheet-58

CLASS –VII Mathematics (Algebraic Expressions)

Choose correct option in questions 1 to 4.

1. Subtract - $5y^2$ from y^2.
   a. $6y^2$ b. $4y^2$
   c. $5y^2$ d. $-6y^2$

2. Get the algebraic expressions using variables, constants and arithmetic operations.
   One- fourth of the sum of numbers m and n
   a. 4 (m + n) b. (m + n)/4
   c. m – n d. m + n

3. Find the value $a^2 + 2ab + b^2$ for a = 3, b = 2.
   a. 20 b. 30
   c. 25 d. none of these

4. Subtract $5a^2 - 7ab + 5b^2$ from $3ab - 2a^2 - 2b^2$.
   a. $10ab - 9a^2 - 7b^2$ b. $12ab - 7a^2 - 8b^2$
   c. $10ab - 7a^2 - 8b^2$ d. $10ab - 7a^2 - 7b^2$

Fill in the blanks:

5. An expression which contains three unlike terms is called _____.

6. If a natural number is denoted by *n*, its successor is _____.

7. A term is a product of _____.

8. From the sum of 13x – 8y +11 and – y – 11, subtract 3x – 3y – 11.

9. Identify, in the following expressions, terms which are not constants. Give their numerical coefficients:
   $xy + 4$, $13 - y^2$, $13 - y + 5y^2$, $4p^2q - 3pq^2 + 5$

10. Find the value of the following expressions for a = 3, b = 2.
    a. $(a + b)^2$
    b. 13 (7a – 4b)

11. What should be the value of *a* if the value of $2x^2 + x - a$ equals to 5, when $x = 0$?

Answer key:

1. a
2. b
3. c
4. a
5. trinomial
6. $(n + 1)$
7. factors
8. $10x - 6y + 11$
9.

S. No.	Expression	Term (which is not a constant)	Numerical Coefficient
(i)	$xy+4$	xy	1
(ii)	$13 - y^2$	$- y^2$	-1
(iii)	$13 - y+5y^2$	$-y$ $5y^2$	-1 5
(iv)	$4p^2q - 3pq^2+5$	$4p^2q$ $- 3pq^2$	4 -3

10. a. 25
    b. 169
11. -5

CBSE Worksheet-59

CLASS –VII Mathematics (Algebraic Expressions)

Choose correct option in questions 1 to 4.

1. If the area of the rectangle is 105 cm^2. Its length is (4x – 5) cm and breadth is (2x – 5) cm, find the perimeter?

a. 44 cm b. 55 cm
c. 33 cm d. 66 cm

2. What should be added to $x^2 + xy$ to obtain $5x^2 - xy$?

a. $5x^2 – 2xy$ b. $4x^2 – 2xy$
c. $4x^2 – 3xy$ d. $5x^2 – 3xy$

3. Get the algebraic expressions using variables, constants and arithmetic operations. Product of numbers x and y subtracted from their 10

a. xy + 10 b. 10xy
c. xy – 10 d. 10/xy

4. Simplify: (5x – 2y) (5x + 2y).

a. $49x^2 – 4y^2$ b. $25x^2 – 9y^2$
c. $14x^2 – 9y^2$ d. $25x^2 – 4y^2$

Fill in the blanks:

5. Factors containing variables are said to be _____.

6. The _____ is the numerical factor in the term.

7. Any expression with one or more terms is called a _____.

8. From the sum of $4 + 3x$ and $5 – 4x + 2x^2$, subtract the sum of $3x^2 – 5x$ and $–x^2 + 2x + 5$.

9. a. If $z = 10$, find the value of $z^3 – 3(z – 10)$.
   b. If $p = – 10$, find the value of $p^2 – 2p – 100$.

10. Find the value of the following expressions for a = 3, b = 2.
    a. $a^2 + 2ab + b^2$
    b. $a^3 – b^3$

11. Simplify the expressions and find the value if x is equal to 2.
    a. $x + 7 + 4 (x – 5)$
    b. $3 (x + 2) + 5x – 7$

Answer key:

1. a
2. b
3. c
4. a
5. algebraic factors
6. coefficient
7. polynomial
8. 2x + 4
9. a. 1000
   b. 20
10. a. 25
    b. 19
11. a. $5x - 13; -3$
    b. $8x - 1; 15$

CBSE Worksheet-60

CLASS –VII Mathematics (Algebraic Expressions)

Choose correct option in questions 1 to 4.

1. When $a = 0$, $b = -1$, find the value of the expressions: $2a^2b + 2ab^2 + ab$.
   a. 0 b. 1
   c. 2 d. 3

2. Subtract $a - b$ from $3a - b + 4$.
   a. $3a + 5$ b. $2a + 4$
   c. $3a + 4$ d. $2a + 5$

3. Get the algebraic expressions using variables, constants and arithmetic operations. The number x multiplied by itself
   a. 2x b. x + 2
   c. x^2 d. none of these

4. Simplify the expression: $12m^2 - 9m + 5m - 4m^2 - 7m + 10$.
   a. $8m^2 - 11m + 15$ b. $8m^2 - 15m + 10$
   c. $9m^2 - 11m + 10$ d. $8m^2 - 11m + 10$

Fill in the blanks:

5. Terms which have the same algebraic factors are _____.

6. The general (*nth*) term of a number pattern (or a sequence) is an _____ in n.

7. The sum (or difference) of two like terms is a _____.

8. From the sum of $2y^2 + 3yz$, $-y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $-y^2 + yz + z^2$.

9. State whether a given pair of terms is of like or unlike terms.
   a. $4m^2p$, $4mp^2$
   b. $12xz$, $12x^2z^2$.

10. From the sum of $2y^2 + 3yz$, $-y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $-y^2 + yz + z^2$.

11. What should be subtracted from $2a + 8b + 10$ to get $-3a + 7b + 16$?

Answer key:

1. a
2. b
3. c
4. a
5. like terms
6. expression
7. like term
8. $-y^2 + 2yz + z^2$
9. a. unlike
   b. unlike
10. $-y^2 + 2yz + z^2$
11. $5a + b - 6$

CBSE Worksheet-61

CLASS –VII Mathematics (Exponents and Powers)

Choose correct option in questions 1 to 4.

1. Find the value of $(-9)^3 \times (-4)^2$.
   a. -11664 b. 36
   c. 5 d. 25

2. Simplify: $7^x \times 7^2$
   a. 7^{x+3} b. 7^{x+2}
   c. 7^{2x} d. 7^{x-2}

3. Which is greater?
   a. 8^2 b. 2^3
   c. 2^8 d. 3^2

4. Find the value of $(6^0 - 2^0) \times (6^0 + 2^0)$.
   a. 2 b. 1
   c. 3 d. 0

Fill in the blanks:

5. In $(-9)^4$, the base is _____ and the exponent is 4.

6. $(-1)^4$ is equal to ____.

7. $(a^x)^y$ = _____

8. Show that $\left(\frac{9}{13} \times \frac{-11}{17}\right)^{-8} = \left(\frac{13}{9}\right)^8 \times \left(\frac{17}{-11}\right)^8$.

9. Express the following numbers in the standard form.
   a. 5,223,000,000
   b. 256,000,000

10. Simplify and write the answer in exponential form.
    a. $3^7 \div 3^4$
    b. $5^8 \div 5^4$

11. Find *m* so that $\left(\frac{2}{9}\right)^3 \times \left(\frac{2}{9}\right)^{-6} = \left(\frac{2}{9}\right)^{2m-1}$.

Answer key:

1. a
2. b
3. c
4. a
5. -9
6. 1
7. a^{xy}
8. $-y^2 + 2yz + z^2$
9. a. $5,223,000,000 = 5 \times 10^9 + 2 \times 10^8 + 2 \times 10^7 + 3 \times 10^6$
   b. $256,000,000 = 2 \times 10^8 + 5 \times 10^7 + 6 \times 10^6$
10. a. 3^3
    b. 5^4
11. $m = -1$

CBSE Worksheet-62

CLASS –VII Mathematics (Exponents and Powers)

Choose correct option in questions 1 to 4.

1. Express $(3^7 \times 3^3) \times 3^3$ as a rational number with negative exponent.
   a. $\left(\frac{1}{3}\right)^{-13}$ b. 1
   c. $\left(\frac{1}{3}\right)^{13}$ d. 3^{13}

2. 10^2 ____ 2^{10}
   a. $>$ b. $<$
   c. $=$ d. none of these

3. $8^{13} \div 8^{19} = \frac{1}{8^{\cdots}}$
   a. 3 b. 2
   c. 6 d. none of these

4. Expanded form of a^4 is _____.
   a. a b. $a \times a$
   c. $a \times a \times a$ d. $a \times a \times a \times a$

Fill in the blanks:

5. In $(-9)^4$, the base is (-9) and the exponent is _____.

6. $(-1)^5$ is equal to ____.

7. $(2^3)^2$ = _____

8. Simplify: $(2^7 \times 2^8) \div 2^{12}$.

9. Find the number from each of the following expanded forms.
   a. $3 \times 10^4 + 5 \times 10^3 + 5 \times 10^1 + 2 \times 10^0$
   b. $8 \times 10^6 + 6 \times 10^4 + 8 \times 10^2 + 3 \times 10^1 + 6 \times 10^0$

10. Simplify and write the answer in exponential form.
    a. $7^8 \div 7^3$
    b. $6^8 \div 6^3$

11. a. Is a^2b^3 same as b^3a^2?
    b. Is m^2n^3 same as m^3n^2?

Answer key:

1. a
2. b
3. c
4. a
5. 4
6. -1
7. 2^6
8. 8
9. a. 35052
   b. 8060806
10. a. 7^5
    b. 6^5
11. a. Yes
    b. No

CBSE Worksheet-63

CLASS –VII Mathematics (Exponents and Powers)

Choose correct option in questions 1 to 4.

1. Express $(-4)^{-1} \times \left(\frac{1}{3}\right)^{-1}$ as a rational number.

   a. $\frac{-3}{4}$ b. $\frac{3}{4}$

   c. $\frac{4}{3}$ d. $\frac{-4}{3}$

2. Express 256 as a power 2.

   a. 2^7 b. 2^8

   c. 2^9 d. 2^6

3. 2^3 ____ 3^2

   a. = b. >

   c. < d. none of these

4. Find the value of 11^2.

   a. 11 b. 10

   c. 9 d. 121

Fill in the blanks:

5. 678^0 = _____

6. Standard form of 70,040,000,000 is _____.

7. The sum (or difference) of two like terms is a _____.

8. Simplify $\frac{2 \times 3^4 \times 2^5}{9 \times 4^2}$.

9. Express the following numbers in standard form.

   a. 296,851,358,200

   b. 25,615,646,430

10. Simplify and write the answer in exponential form.

    a. $(6^5)^3 \div 6^3$

    b. $(9^{50})^3$

11. By what number should $(-5)^4$ be divided so that the quotient may be equal to 5^{-2}?

Answer key:

1. a
2. b
3. c
4. a
5. 1
6. 7.004×10^{10}
7. like term
8. 36

9.

a. $296,851,358,200 = 2 \times 10^{11} + 9 \times 10^{10} + 6 \times 10^{9} + 8 \times 10^{8} + 5 \times 10^{7} + 1 \times 10^{6} + 3 \times 10^{5} + 5 \times 10^{4} + 8 \times 10^{3} + 2 \times 10^{2}$

b. $25,615,646,430 = 2 \times 10^{10} + 5 \times 10^{9} + 6 \times 10^{8} + 1 \times 10^{7} + 5 \times 10^{6} + 6 \times 10^{5} + 4 \times 10^{4} + 6 \times 10^{3} + 4 \times 10^{2} + 3 \times 10^{1}$

10. a. 6^{12}
    b. $(90)^{150}$

11. 5^{6}

CBSE Worksheet-64

CLASS –VII Mathematics (Exponents and Powers)

Choose correct option in questions 1 to 4.

1. Simplify: $\frac{14^4}{7^4}$

   a. 16 b. 8
   c. 4 d. 2

2. Express 65,950 in the standard form.

   a. 6.595×10^3 b. 6.595×10^4
   c. 65.95×10^4 d. 6.595×10^5

3. 100^2 ____ 2^{100}

   a. = b. >
   c. < d. none of these

4. Express in exponential form: $b \times b \times b \times b$

   a. b^2 b. b^3
   c. b^5 d. b^4

Fill in the blanks:

5. 3^0 = ____

6. The standard form of 9641.76 is _____.

7. The value of $(-4)^{3\times5\,-\,6-9}$ is _____.

8. Simplify: $\frac{3^2 \times 4^5 \times x^4}{3^4 \times 4^3 \times x^9}$.

9. State true or false and justify your answer:

   a. $10 \times 10^{11} = 100^{11}$
   b. $2^3 \times 3^2 = 6^5$
   c. $3^0 = (1000)^0$

10. Simplify and write the answer in exponential form.

    a. $(5^{32})^5$
    b. $(2^{64})^5$

11. Express the number appearing in the following statements in standard form.

    a. The distance between Earth and Moon is 384,000,000 m.
    b. Speed of light in vacuum is 300,000,000 m/s.

Answer key:

1. a
2. b
3. c
4. a
5. 1
6. 9.64176×10^3
7. 1
8. $\frac{4^2}{3^2 \times x^5}$
9. a. False; $10 \times 10^{11} = 10^{12}$ and $(100)^{11} = (10^2)^{11} = 10^{22}$
   b. False; $2^3 = 8$, $3^2 = 9$, $2^3 \times 3^2 = 72$ and $6^5 = 7776$
   c. True; $3^0 = 1$, $(1000)^0 = 1$
10. a. 5^{160}
    b. 2^{320}
11. a. 3.84×10^8 m
    b. 3×10^8 m/s

CBSE Worksheet-65

CLASS –VII Mathematics (Exponents and Powers)

Choose correct option in questions 1 to 4.

1. Simplify: $2^3 \times 2^2 \times 5^5$
   a. 10^5 b. 10^4
   c. 10^3 d. 10^2

2. Find the value of $(4^2)^5$.
   a. 4^{11} b. 4^{10}
   c. 4^3 d. 4^9

3. Simplify: $(2^{20} \div 2^{15}) \times 2^3$.
   a. 128 b. 64
   c. 256 d. none of these

4. Find the number from the following expanded form:
   $8 \times 10^4 + 6 \times 10^3 + 0 \times 10^2 + 4 \times 10^1 + 5 \times 10^0$
   a. 80645 b. 86054
   c. 96045 d. 86045

Fill in the blanks:

5. $a^x \div b^x =$ _____

6. The usual form of 1.001×10^9 is _____.

7. The value of $2^3 \times a^3 \times 5a^4$ is _____.

8. Simplify: $\frac{4^5 \times 9^5 \times x^7}{2^3 \times 3^6 \times x^5}$.

9. State whether a given pair of terms is of like or unlike terms.
   a. $4m^2p$, $4mp^2$
   b. $12xz$, $12x^2z^2$.

10. From the sum of $2y^2 + 3yz$, $-y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $-y^2 + yz + z^2$.

11. What number should be multiplied by $(-8)^{-1}$ so that the product may be equal to $(10)^{-1}$?

Answer key:

1. a
2. b
3. c
4. a
5. $\left(\frac{a}{b}\right)^x$
6. 1001000000
7. $40 \times a^7$
8. $2^7 \times 3^4 \times x^2$
9. a. unlike
   b. unlike
10. $-y^2 + 2yz + z^2$
11. $\frac{-4}{5}$

CBSE Worksheet-66

CLASS –VII Mathematics (Symmetry)

1. The angle by which the object rotates is called the _____.

2. In a complete turn (of 360°), the number of times an object looks exactly the same is called _____.

3. State true of false: A square has a rotational symmetry of order 4.

4. If a figure has two or more lines of symmetry, should it have rotational symmetry of order more than 1? Give one example.

5. How many lines of symmetry are there in a circle?

6. How many lines of symmetry are there in a regular hexagon?

Answer Key:

1. angle of rotation

2. rotational symmetry

3. True

4. Yes. An equilateral triangle has three lines of symmetry and its order of rotational symmetry is 3.

5. A circle has unlimited number of lines of symmetry.

6. Six

CBSE Worksheet-67

CLASS –VII Mathematics (Symmetry)

1. A semi-circle has order of rotation _____.

2. A rectangle has order of rotation _____.

3. State true of false:
The angle by which the object rotates is the angle of rotation.

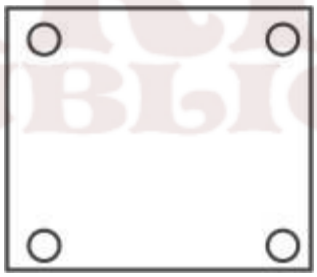
4. Name the quadrilaterals which have both line and rotational symmetry of order more than 1.

5. How many lines of symmetry are there in an equilateral triangle?

6. How many lines of symmetry are there in a regular pentagon?

7. Define the line of symmetry.

8. Copy the following figure with punched holes and find the axes of symmetry for the following:



Answer Key:

1. 1

2. 2

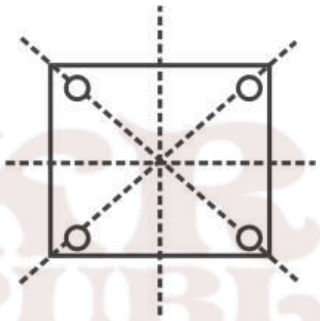
3. True

4. Square

5. 3

6. 5

7. A figure has line symmetry, if there is a line about which the figure may be folded so that the two parts of the figure will coincide.

8. 

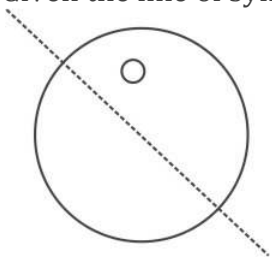
CBSE Worksheet-68

CLASS –VII Mathematics (Symmetry)

1. A regular hexagon has order of rotation _____.
2. A rhombus has order of rotation _____.

3. Name any two figures that have both line symmetry and rotational symmetry.

4. Given the line of symmetry, find the other hole:

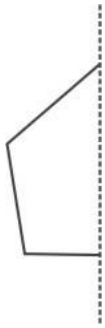


5. State the number of lines of symmetry in rectangle.

6. What other name can you give to the line of symmetry of:
   a. an isosceles triangle
   b. a circle

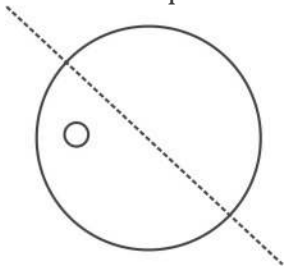
7. Define rotational symmetry.

8. In the following figure, the mirror line (i.e., line of symmetry) is given as a dotted line. Complete each figure performing reflection in the dotted line. Are you able to recall the name of the figure you complete?



Answer Key:

1. 6
2. 4
3. Circle and sqaure



4.
5. 2

6. a. Median
   b. Diameter

7. If, after a rotation, an object looks exactly the same, we say that it has a rotational symmetry.

8. This is pentagon.

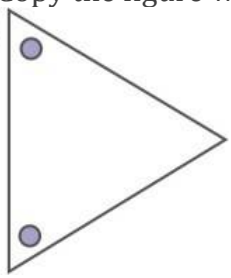
CBSE Worksheet-69

CLASS –VII Mathematics (Symmetry)

1. The _____ of a circle is a line of symmetry.
2. How many lines of symmetry does a square have?

3. Can we have a rotational symmetry of order more than 1 whose angle of rotation is 45º?

4. Copy the figure with punched holes and find the axes of symmetry.

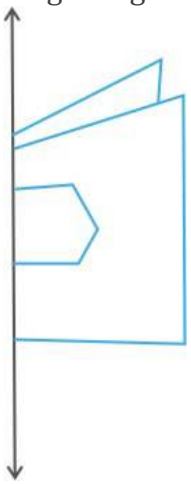


5. How many lines of symmetry does a regular octagon have?

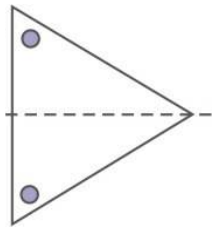
6. Give three examples of shapes with no line of symmetry.

7. Draw, wherever possible, a rough sketch of a quadrilateral with line symmetry but not a rotational symmetry of order more than 1.

8. Given here is a figure of a few folded sheet and designs drawn about the fold. Draw a rough diagram of the complete figure that would be seen when the design is cut off.

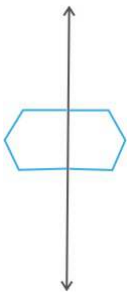


Answer Key:

1. diameter
2. 4
3. Yes
4. 
5. 8

6. A scalene triangle, a polygon, a quadrilateral

7. Kite has a line of symmetry but not a order of rotational Symmetry more than 1.

8. 


CBSE Worksheet-70

CLASS –VII Mathematics (Symmetry)

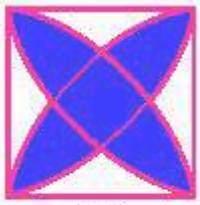
1. The _____ of a circle is a line of symmetry.

2. How many lines of symmetry does a square have?

3. Can we have a rotational symmetry of order more than 1 whose angle of rotation is 60º?

4. Draw multiple lines of symmetry (if any) in each of the following figures:

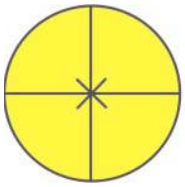
a. 

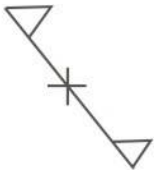
b. 

5. How many lines of symmetry does a regular heptagon have?

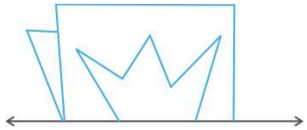
6. What letters of the English alphabet have reflection symmetry about:
   a. a vertical mirror
   b. a horizontal mirror
   c. both horizontal and vertical mirrors**?**

7. Which of the following figures have rotational symmetry of order more than 1:

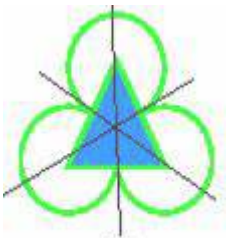
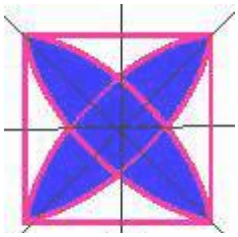
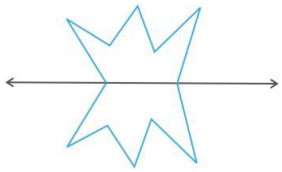
a. 

b. 

8. Given here is a figure of a few folded sheet and designs drawn about the fold. Draw a rough diagram of the complete figure that would be seen when the design is cut off.



Answer Key:

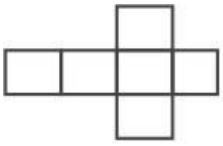
1. diameter
2. 4
3. Yes
4. a.  b. 
5. 7
6. a. Vertical lines of symmetry (like I) are A, H, I, M, O, T, U, V, W, X and Y.
   b. Horizontal lines of symmetry (like C) are B, C, D, E, H, I, K, O and X.
   c. Both horizontal and vertical symmetry are H, I, O, and X.
7. 
8. 

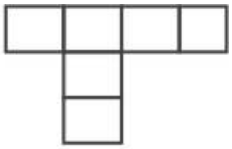
CBSE Worksheet-71
CLASS –VII Mathematics (Visualising Solid Shapes)

1. Give two examples of plane figures.

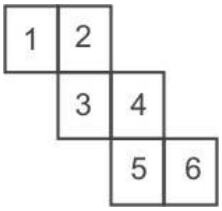
2. Define the net of a solid.

3. Identify the nets which can be used to make cubes.

a. 

b. 

4. Can this be a net for a die? Explain your answer?



5. A box is in the shape of a cuboid. If its length, breadth and height are 50 cm, 20 cm and 15 cm respectively, find its surface area.

6. How many wooden cubical blocks of edge 12 cm can be cut from another cubical block of wood of edge 3 m and 60 cm?

7. Write the number of faces, edges and vertices in the solids given below.
   a. Cube
   b. Pyramid

8. Match these two dimensional figures with their names.

(i) 

(a) Triangle

(ii) 

(b) Rectangle

(iii) 

(c) Trapezium

(iv) 

(d) Cylinder

Answer Key:

1. The circle and the square are examples of plane figures.
2. 4
3. Only (a) makes the cube.
4. No, because one pair of opposite faces will have 1 and 4 on them whose total is not 7, and another pair of opposite faces will have 3 and 6 on them whose total is also not 7.
5. 4100 cm^2
6. 27,000 blocks.
7. a. Faces = 6, edges = 12, vertices = 8
   b. Faces = 4, edges = 6, vertices = 4
8. Matching of the figures is given below:

(i)  (a) Rectangle

(ii)  (b) Cylinder

(iii)  (c) Triangle

(iv)  (d) Trapezium

CBSE Worksheet-72

CLASS –VII Mathematics (Visualising Solid Shapes)

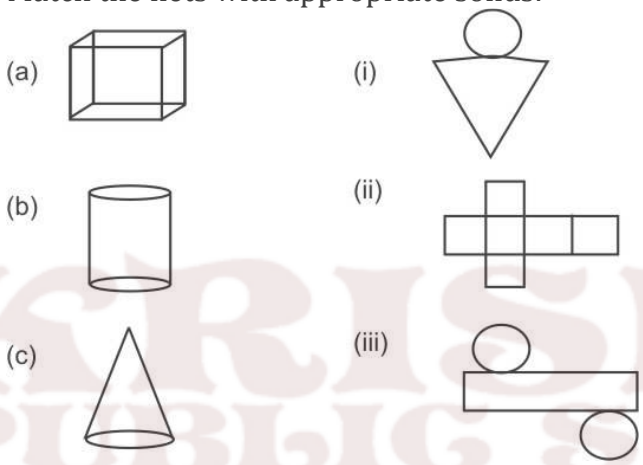
1. The corners of a solid shape are called its _____.

2. Give two examples of solid shapes.

3. If two cubes of dimensions 2 cm × 2 cm × 2 cm are placed side by side, what would the dimension of the resulting cuboid be?

4. Find the surface area of a wooden box whose shape is of a cube of edge 15 cm.

5. Match the nets with appropriate solids:



6. A brick measures 24 cm by 12 cm by 10 cm. How many such bricks are needed to construct a wall of length 5 m, height 2.88 m and thickness 20 cm?

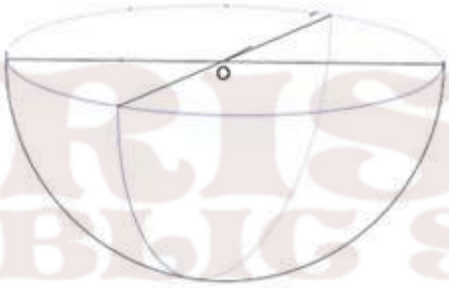
7. Write the number of faces, edges and vertices in the solids given below.
   a. Prism
   b. brick

8. Draw the figure of cross sections obtained by cutting vertically the following shapes.
   a. Cylinder
   b. Sphere

Answer Key:

1. vertices
2. Sphere and Cylinder
3. Length = 4 cm, breadth = 2 cm, height = 2 cm
4. 1350 cm^2
5. (a) – (ii)
   (b) – (iii)
   (c) – (i)
6. 1000 bricks
7. a. Faces = 5, edges = 9, vertices = 6
   b. Faces = 6, edges = 12, vertices = 8
8. a.

b.



CBSE Worksheet-73

CLASS –VII Mathematics (Visualising Solid Shapes)

1. State true of false:
   Flat surfaces of solid shape are called its edges.

2. A cube has …… diagonals.

3. Find the total area of the four walls of a room whose dimensions are 6 m by 4.5 m by 3m.

4. Here is an incomplete net for making a cube. Complete it in at least two different ways.

5. A village, having a population of 4000, requires 150 litres water per head per day. It has a tank measuring 20 m by 15 m by 6 m. For how many days the water of this tank will last?

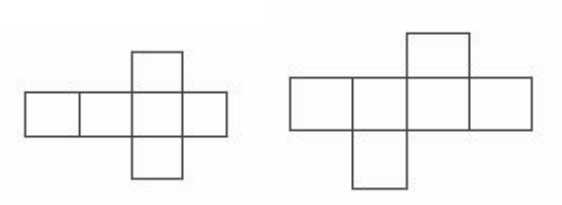
6. A brick measures 24 cm by 12 cm by 10 cm. How many such bricks are needed to construct a wall of length 5 m, height 2.88 m and thickness 20 cm?

7. Write the number of faces, edges and vertices in the solids given below.
   a. Prism
   b. brick

8. Draw the figure of cross sections obtained by cutting vertically the following shapes.
   a. Prism
   b. Cone

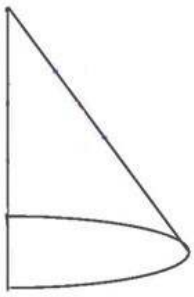
Answer Key:

1. False
2. 4
3. 63 m^2
4. Two ways are:



5. 3 days
6. 1000 bricks
7. a. Faces = 5, edges = 9, vertices = 6
   b. Faces = 6, edges = 12, vertices = 8
8. a.

b.



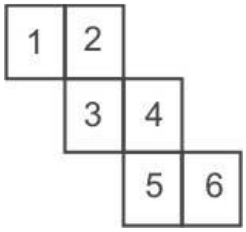
CBSE Worksheet-74

CLASS –VII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. The number of vertices of a cuboid is _____.
2. All the six faces of a _____ are congruent and adjacent faces are perpendicular to each other.

3. Can this be a net for a die? Explain your answer?



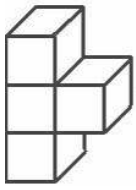
4. Here is an incomplete net for making a cube. Complete it in at least two different ways.

5. How many wooden cubical blocks of edge 12 cm can be cut from another cubical block of wood of edge 3 m and 60 cm?

6. What will happen to volume of a cube of side 10 cm, if its each edge is doubled?

7. How many types of sketches of a solid are possible? Name them.

8. Give three views of the given figure.

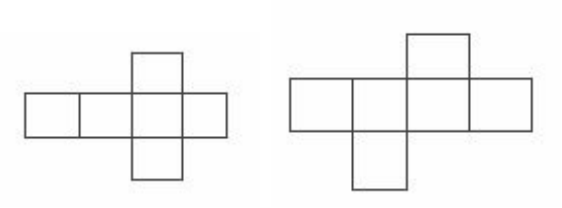


Answer Key:

1. 8
2. cube

3. No, because one pair of opposite faces will have 1 and 4 on them whose total is not 7, and another pair of opposite faces will have 3 and 6 on them whose total is also not 7.

4. Two ways are:

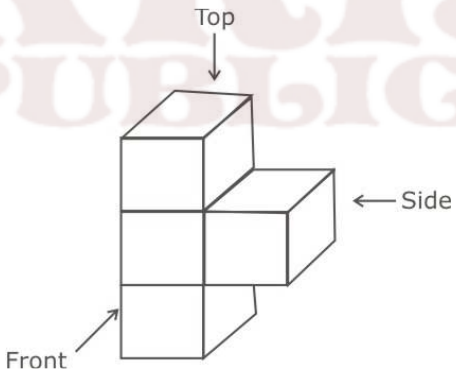


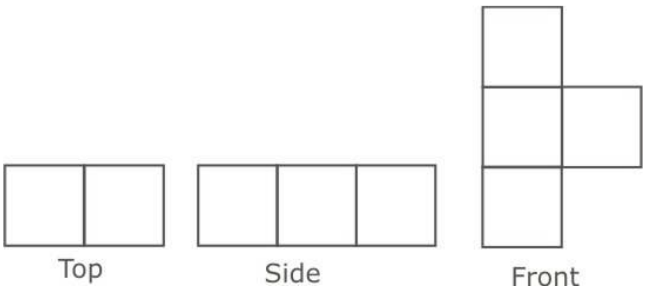
5. 27,000 blocks

6. New volume gets 8 times the original volume.

7. Two types of sketches of a solid are possible:
   1. An oblique sketch
   2. An isometric sketch

8.



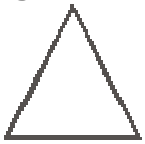


CBSE Worksheet-75

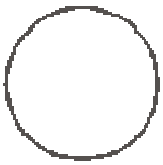
CLASS –VII Mathematics (Visualising Solid Shapes)

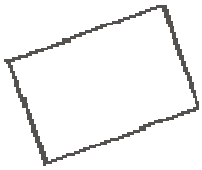
1. Flat surfaces of a solid shape are called its edges. (True/False)

2. Which figure does represent circle?

a. 

b. 

c. 

d. 

3. How an object which is in 3D can be viewed in different ways? Name all the ways.

4. Make a net for the given cone.

5. What is an oblique sketch?

6. What will happen to volume of a cube of side 10 cm, if its each edge is tripled?

7. How many types of sketches of a solid are possible? Name them.

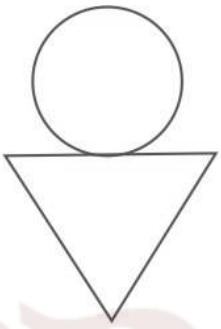
8. If two cuboids of dimensions 3 cm × 3 cm × 6 cm are placed height by height, what would be the dimensions of the resulting figure be?

Answer Key:

1. False

2. c

3. Different sections of 3D can be viewed in many ways as follows:
   a. One way is to view by cutting or slicing the shape, which would result in the cross-section of the solid.
   b. Another way is by observing a 2D shadow of a 3D shape.
   c. A third way is to look at the shape from different angles

4. 

5. An oblique sketch does not have proportional lengths. Still it conveys all-important aspects of the appearance of the solid.

6. New volume gets 27times the original volume.

7. Two types of sketches of a solid are possible:
   1. An oblique sketch
   2. An isometric sketch

8. Length = 3 cm + 3 cm = 6 cm, Breadth = 3 cm, Height = 6 cm