CBSE-NCERT

PRINTABLE

WORKSHEETS

MATHEMATICS

(Class 8)

Index

Class- VIII (Mathematics)

CBSE Worksheet-01

CLASS – VIII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 5.

1. Find the reciprocal of -2.

   a. $\frac{-1}{2}$ b. 2

   c. -2 d. none of these

2. Write the rational number that is equal to its negative.

   a. 0 b. 1

   c. -1 d. 2

3. Write the additive inverse of $\frac{2}{3}$.

   a. $\frac{2}{3}$ b. 1

   c. $-\frac{2}{3}$ d. 0

4. Find the multiplicative inverse of -13.

   a. -13 b. 13

   c. 12 d. $\frac{-1}{13}$

5. Name the property under multiplication used in $\frac{-1}{5}\times(-5)=-5\times\frac{-1}{5}=1$.

   a. Reciprocal b. Commutative property

   c. Associative property d. none of thes Multiplicative identity e

Fill in the blanks:

6. A number which can be written in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$ is called a _____.
7. Sum of two rational numbers is a _____.
8. For any three rational numbers a, b and c, $a + (b + c)$ = _____.
9. _____ = $1 \times a = a$ for any rational number a.
10. Find $\frac{3}{7}+\left(-\frac{6}{11}\right)+\left(-\frac{8}{21}\right)+\frac{5}{22}$
11. Find any ten rational numbers between $\frac{-5}{6}$ and $\frac{5}{8}$.

Answer key:

1. a

2. b

3. c

4. d

5. a

6. rational number

7. rational number

8. $(a + b) + c$

9. $a \times 1$

10. $\frac{-125}{462}$

11. $\frac{-19}{24}, \frac{-18}{24}, \frac{-17}{24}, ..., \frac{14}{24}$

CBSE Worksheet-02

CLASS – VIII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 5.

1. Find the reciprocal of $\frac{-1}{5}$.

   a. -5 b. 5

   c. $\frac{-1}{5}$ d. none of these

2. ¼ × 1 = ___

   a. 1 b. ¼

   c. 0 d. 4

3. Write the additive inverse of $\frac{4}{5}$.

   a. $\frac{4}{5}$ b. 1

   c. $-\frac{4}{5}$ d. 0

4. Find the multiplicative inverse of $\frac{1}{4}$.

   a. -4 b. $\frac{1}{4}$

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

5. Name the property under multiplication used in $\frac{-1}{5}\times 1 = 1\times\frac{-1}{5} = \frac{-1}{5}$.

   a. Multiplicative identity b. Commutative property

   c. Associative property d. none of these

Fill in the blanks:

6. A number which can be written in the form $\frac{p}{q}$, where p and q are _____ and $q \neq 0$ is called a rational number.
7. _____ are closed under addition.
8. _____ is not associative for rational numbers.
9. 1 is the _____ for rational numbers.
10. Find: $\frac{-4}{5}\times\frac{3}{7}\times\frac{15}{16}\times\left(\frac{-14}{9}\right)$
11. Find a rational number between ¼ and ½.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. integers
7. Rational numbers
8. Subtraction or Division
9. multiplicative identity
10. ½
11. 3/8

CBSE Worksheet-03

CLASS – VIII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 4.

1. Name the property under multiplication used in $\frac{-1}{5}\times\frac{1}{2}=\frac{1}{2}\times\frac{-1}{5}$.

   a. Commutative property b. Multiplicative identity
   c. Associative property d. none of these

2. ½ × 1 = _____

   a. 1 b. ½
   c. 0 d. 2

3. Write the additive inverse of $\frac{6}{7}$.

   a. $\frac{6}{7}$ b. 1
   c. $-\frac{6}{7}$ d. 0

4. Find the multiplicative inverse of $\frac{2}{9}$.

   a. $-\frac{2}{9}$ b. $\frac{2}{9}$
   c. $-\frac{9}{2}$ d. $\frac{9}{2}$

5. State true or False: 1 is the only rational number that is equal to its reciprocal.

Fill in the blanks:

6. A number which can be written in the form $\frac{p}{q}$, where p and q are integers and ____ is called a rational number.
7. _____ are closed under subtraction.
8. The product of two rational numbers is always a _____.
9. Zero has _____ reciprocal.
10. Find: $\frac{2}{5}\times\frac{-3}{7}-\frac{1}{14}-\frac{3}{7}\times\frac{3}{5}$
11. Find three rational numbers between ¼ and ½.

Answer key:

1. a
2. b
3. c
4. d
5. False
6. $q \neq 0$
7. Rational numbers
8. rational number
9. no
10. - ½
11. $\frac{5}{16}, \frac{3}{8}, \frac{7}{16}$

CBSE Worksheet-04

CLASS – VIII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 5.

1. Write the rational number that does not have a reciprocal.
   a. 0 b. 1
   c. -1 d. 2
2. 0 × ¼ = _____
   a. 1 b. 0
   c. ¼ d. 4
3. Write the additive inverse of $\frac{9}{8}$.
   a. $\frac{9}{8}$ b. 1
   c. $-\frac{9}{8}$ d. 0
4. Find the multiplicative inverse of $-\frac{9}{13}$.
   a. $\frac{9}{13}$ b. $-\frac{9}{13}$
   c. $\frac{13}{9}$ d. $-\frac{13}{9}$
5. Name the property under multiplication used in $\frac{3}{5}\times\frac{7}{2}=\frac{7}{2}\times\frac{3}{5}$.
   a. Commutative property b. Multiplicative identity
   c. Associative property d. none of these

Fill in the blanks:

6. A number which can be written in the form _____, where p and q are integers and $q \neq 0$ is called a rational number.

7. For any two rational numbers a and b, $a + b$ = _____.

8. For any three rational numbers a, b and c, $a \times (b \times c)$ = _____.

9. Reciprocal of $\frac{1}{x}$, where $x \neq 0$ is _____.

10. Tell what property allows you to compute $\frac{1}{3}\times\left(6\times\frac{4}{3}\right)$ as $\left(\frac{1}{3}\times 6\right)\times\frac{4}{3}$.

11. Find five rational numbers between $\frac{2}{3}$ and $\frac{4}{5}$.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. $\frac{p}{q}$
7. $b + a$
8. $(a \times b) \times c$
9. x
10. Associative property of multiplication
11. $\frac{41}{60}, \frac{42}{60}, \frac{43}{60}, \frac{44}{60}, \frac{45}{60}$

CBSE Worksheet-05

CLASS – VIII Mathematics (Rational Numbers)

Choose correct option in questions 1 to 5.

1. Write the rational numbers that are equal to their reciprocals.
   a. 1, -1 b. 0
   c. 2, -2 d. none of these

2. 0 × ½ = ___
   a. ½ b. 0
   c. 1 d. 2

3. Write the additive inverse of $\frac{12}{11}$.
   a. $\frac{12}{11}$ b. 1
   c. $-\frac{12}{11}$ d. 0

4. Find the multiplicative inverse of 25.
   a. -25 b. 25
   c. 24 d. $\frac{1}{25}$

5. Name the property under multiplication used in $\left(\frac{-1}{5}\times\frac{1}{2}\right)\times\frac{1}{3}=\frac{-1}{5}\times\left(\frac{1}{2}\times\frac{1}{3}\right)$.
   a. Associative property b. Multiplicative identity
   c. Commutative property d. none of these

Fill in the blanks:

6. A number which can be written in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$ is called a _____.
7. In general, $a \times b =$ _____ for any two rational numbers a and b.
8. _____ is called the identity for the addition of rational numbers.
9. The numbers _____ and _____ are their own reciprocals

10. Write any 3 rational numbers between –2 and 0.

11. Write five rational numbers greater than –2.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. rational number
7. $b \times a$
8. Zero
9. 1, -1
10. $\frac{-19}{10}, \frac{-18}{10}, \frac{-17}{10}, \frac{-16}{10}, \frac{-15}{10}, \ldots, \frac{-1}{10}$
11. $-\frac{3}{2}, -1, \frac{-1}{2}, 0, \frac{1}{2}$

CBSE Worksheet-06

CLASS – VIII Mathematics (Linear Equations in One Variable)

Choose correct option in questions 1 to 5.

1. Find the solution of $2x - 3 = 7$.
   a. 5 b. 4
   c. 3 d. none of these

2. Solve: $3x = 12$
   a. 3 b. 4
   c. 15 d. 9

3. Solve $2x - 3 = x + 2$
   a. 4 b. 3
   c. 5 d. 0

4. Solve: $5x + \frac{7}{2} = \frac{3}{2}x - 14$
   a. -2 b. -3
   c. -4 d. -5

5. Solve: $5x - 2(2x - 7) = 2(3x - 1) + \frac{7}{2}$
   a. $\frac{5}{2}$ b. 2
   c. 3 d. ½

Fill in the blanks:

6. An algebraic equation is an _____ involving variables.

7. What should be added to twice the rational number $\frac{-7}{3}$ *to get* $\frac{3}{7}$?

8. The difference between two whole numbers is 66. The ratio of the two numbers is 2:5. What are the two numbers?

9. The digits of a two-digit number differ by 3. If the digits are interchanged, and the resulting number is added to the original number, we get 143. What can be the original number?

Answer key:

1. a

2. b

3. c

4. d

5. a

6. equality

7. $\frac{107}{21}$

8. 66

9. 85

CBSE Worksheet-07

CLASS – VIII Mathematics (Linear Equations in One Variable)

Choose correct option in questions 1 to 5.

1. Solve $2y + 9 = 4$.
   a. -5/2 b. ½
   c. 2 d. none of these

2. Solve: $4y = 20$
   a. 4 b. 5
   c. 24 d. 16

3. Solve: $3x = 2x + 18$
   a. 6 b. 9
   c. 18 d. 0

4. Solve: $x = \frac{4}{5}(x + 10)$
   a. 10 b. 20
   c. 30 d. 40

5. Solve: $x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$
   a. -5 b. 4
   c. 5 d. none of these

Fill in the blanks:

6. In an equation the values of the expressions on the LHS and RHS are _____.

7. The perimeter of a rectangle is 13 cm and its width is $2\frac{3}{4}$ cm. Find its length.

8. Aarushi has a total of Rs 590 as currency notes in the denominations of Rs 50, Rs 20 and Rs 10. The ratio of the number of Rs 50 notes and Rs 20 notes is 3:5. If she has a total of 25 notes, how many notes of each denomination she has?

9. Arjun is twice as old as Shriya. Five years ago his age was three times Shriya's age. Find their present ages.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. equal
7. $3\frac{3}{4}cm$
8. The number of Rs 20 notes she has = 10

   The number of Rs 10 notes she has = 9
9. Shriya's present age = 10 years

   Arjun's present age = 20 years

CBSE Worksheet-08

CLASS – VIII Mathematics (Linear Equations in One Variable)

Choose correct option in questions 1 to 5.

1. Solve: $x - 2 = 7$

   a. 9 b. 5

   c. -5 d. none of these

2. Solve: $5a = 30$

   a. 5 b. 6

   c. 25 d. 35

3. Solve: $5t - 3 = 3t - 5$

   a. 1 b. 2

   c. -1 d. 0

4. Solve: $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$

   a. 4 b. 6

   c. 8 d. 10

5. Solve: $\frac{3t-2}{4} - \frac{2t+3}{3} = \frac{2}{3} - t$

   a. 2 b. 3

   c. 4 d. none of these

Fill in the blanks:

6. The value of the expression on one side of the equality sign is _____ to the value of the expression on the other side.

7. The present age of Sahil's mother is three times the present age of Sahil. After 5 years their ages will add to 66 years. Find their present ages.

8. Sum of two numbers is 95. If one exceeds the other by 15, find the numbers.

9. Amina thinks of a number and subtracts $\frac{5}{2}$ from it. She multiplies the result by 8. The result now obtained is 3 times the same number she thought of. What is the number?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. equal
7. Sahil's present age is 14 years and his mother's age is 42 years.
8. 40 and 55
9. 4

CBSE Worksheet-09

CLASS – VIII Mathematics (Linear Equations in One Variable)

Choose correct option in questions 1 to 5.

1. Solve: $y + 3 = 10$

   a. 7 b. 13

   c. -7 d. none of these

2. Solve: $7x = 21$

   a. 2 b. 3

   c. 14 d. 28

3. Solve: $5x + 9 = 5 + 3x$

   a. 1 b. -1

   c. -2 d. 0

4. Solve: $2y + \frac{5}{3} = \frac{26}{3} - y$

   a. 2 b. 3

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

5. Solve: $\frac{8x-3}{3x} = 2$

   a. 3/2 b. ½

   c. ¼ d. none of these

Fill in the blanks:

6. A linear equation may have for its _____ any rational number.

7. Bansi has 3 times as many two-rupee coins as he has five-rupee coins. If he has in all a sum of Rs 77, how many coins of each denomination does he have?

8. Two numbers are in the ratio 5:3. If they differ by 18, what are the numbers?

9. A positive number is 5 times another number. If 21 is added to both the numbers, then one of the new numbers becomes twice the other new number. What are the numbers?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. solution
7. Number of five-rupee coins = 7, number of two-rupee coins = 21
8. 45 and 27
9. 7, 35

CBSE Worksheet-10

CLASS – VIII Mathematics (Linear Equations in One Variable)

Choose correct option in questions 1 to 5.

1. Solve: $6 = z + 2$

   a. 4 b. 8

   c. -8 d. none of these

2. Solve: $8y = 32$

   a. 3 b. 4

   c. 24 d. 40

3. Solve: $4z + 3 = 6 + 2z$

   a. ½ b. 1

   c. $\frac{3}{2}$ d. 0

4. Solve: $3m = 5\,m - \frac{8}{5}$

   a. 0.2 b. 0.25

   c. 0.5 d. $\frac{4}{5}$

5. Solve: $\frac{z}{z+15} = \frac{4}{9}$

   a. 12 b. 13

   c. 14 d. none of these

Fill in the blanks:

6. The equations are linear, i.e., the highest power of the variable appearing in the equation is _____.

7. The sum of three consecutive multiples of 11 is 363. Find these multiples.

8. Three consecutive integers add up to 51. What are these integers?

9. Sum of the digits of a two-digit number is 9. When we interchange the digits, it is found that the resulting new number is greater than the original number by 27. What is the two-digit number?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. 1
7. The three consecutive multiples are 110, 121, 132.
8. 16, 17 and 18
9. 36

CBSE Worksheet-11

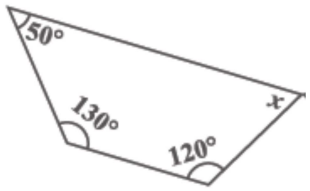
CLASS – VIII Mathematics (Understanding Quadrilaterals)

Choose correct option in questions 1 to 5.

1. How many diagonals does a convex quadrilateral have?
   a. 2 b. 3
   c. 4 d. none of these

2. State the name of a regular polygon of 5 sides.
   a. quadrilateral b. pentagon
   c. hexagon d. octagon

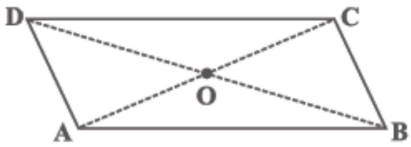
3. Find the angle measure *x* in the following figure:



   a. 30º b. 45º
   c. 60º d. 90º

4. Find the number of sides of a regular polygon whose each exterior angle has a measure of 45°.
   a. 3 b. 4
   c. 6 d. 8

5. Given a parallelogram ABCD.



   AD = ...
   a. BC b. AB
   c. CD d. none of these

Fill in the blanks:

6. A simple closed curve made up of only line segments is called a _____.

7. A _____ is both 'equiangular' and 'equilateral'.

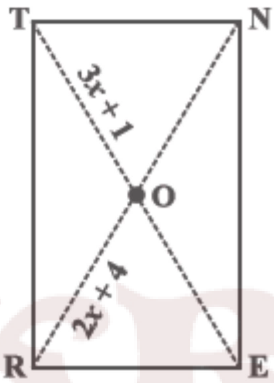
8. A _____ is a quadrilateral whose opposite sides are parallel.

9. A _____ has all the properties of a parallelogram and also that of a kite.

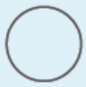
10. Find the values of the unknowns x, y, z.

11. State whether True or False.
   a. All rectangles are squares.
   b. All kites are rhombuses.

12. RENT is a rectangle. Its diagonals meet at O. Find x, if OR = $2x + 4$ and OT = $3x + 1$.



13. Match the following:

Figure		Type	
(1)		(a)	Simple closed curve
(2)		(b)	A closed curve that is not simple
(3)		(c)	Simple curve that is not closed
(4)		(d)	Not a simple curve

Answer key:

1. a
2. b
3. c
4. d
5. a
6. polygon
7. regular polygon
8. parallelogram
9. rhombus
10. $x = 80°$; $y = 100°$; $z = 80°$
11. a. False
    b. False
12. $x = 3$
13. (1)-(c), (2)-(d), (3)-(a), (4)-(b)

CBSE Worksheet-12

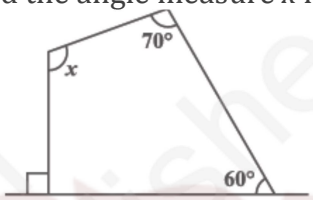
CLASS – VIII Mathematics (Understanding Quadrilaterals)

Choose correct option in questions 1 to 5.

1. How many diagonals does a regular have?
   a. 9 b. 8
   c. 7 d. none of these

2. State the name of a regular polygon of 6 sides.
   a. pentagon b. hexagon
   c. heptagon d. octagon

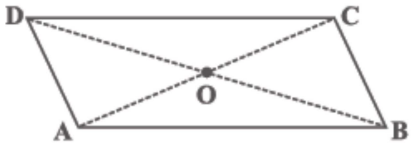
3. Find the angle measure *x* in the following figure:



   a. 120º b. 45º
   c. 140º d. 90º

4. Find the measure of each exterior angle of a regular polygon of 9 sides.
   a. 30º b. 60º
   c. 90º d. 40º

5. Given a parallelogram ABCD.



   ∠DCB = ...
   a. ∠DAB b. ∠CBA
   c. ∠CDA d. none of these

Fill in the blanks:

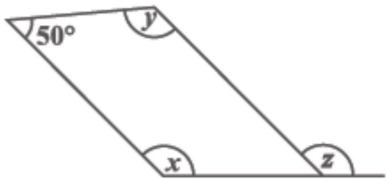
6. The paper is a model for a _____.

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

8. The opposite sides of a parallelogram are of _____ length.

9. The _____ of a rhombus are perpendicular bisectors of one another.

10. Find the values of the unknowns x, y, z.



11. State whether True or False.
    a. All rhombuses are parallelograms
    b. All rhombuses are kites.

12. RICE is a rhombus. Find x, y, z.

8. Three consecutive integers add up to 51. What are these integers?

9. Sum of the digits of a two-digit number is 9. When we interchange the digits, it is found that the resulting new number is greater than the original number by 27. What is the two-digit number?

Answer key:

1. a
2. b
3. c
4. d
5. a
6. plane surface
7. 180°
8. equal
9. diagonals
10. $x = 130°$; $y = 130°$; $z = 130°$
11. a. True
    b. True
12. $x = 5, y = 12, z = 13$

CBSE Worksheet-13

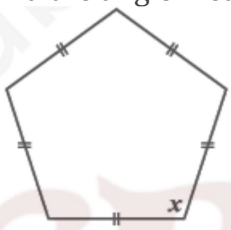
CLASS – VIII Mathematics (Understanding Quadrilaterals)

Choose correct option in questions 1 to 5.

1. How many diagonals does a triangle have?
   a. 0 b. 1
   c. 2 d. none of these

2. Solve: 8y = 32
   a. 3 b. 4
   c. 24 d. 40

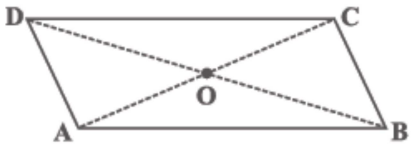
3. Find the angle measure *x* in the following figure:



   a. 120º b. 130º
   c. 108º d. 90º

4. Find the measure of each exterior angle of a regular polygon of 15 sides.
   a. 30º b. 36º
   c. 12º d. 24º

5. Given a parallelogram ABCD.



   OC = ...
   a. OA b. OB
   c. OD d. none of these

Fill in the blanks:

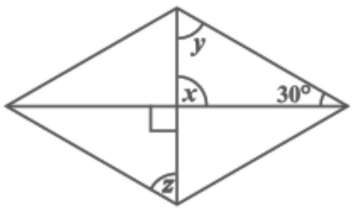
6. A _____ is a line segment connecting two non-consecutive vertices of a polygon.

7. The sum of the measures of the four angles of a quadrilateral is_____.

8. The opposite angles of a parallelogram are of _____ measure.

9. A _____ is a parallelogram with equal angles.

10. Find the values of the unknowns x, y, z.



11. State whether True or False.
    a. All squares are rhombuses and also rectangles.
    b. All parallelograms are trapeziums.

12. Two adjacent angles of a parallelogram have equal measure. Find the measure of each of the angles of the parallelogram.

Answer key:

1. a
2. b
3. c
4. d
5. a
6. diagonal
7. 360º
8. equal
9. rectangle
10. $x = 90°$; $y = 60°$; z = 60°
11. a. True
    b. True
12. Each is a right angle.

CBSE Worksheet-14

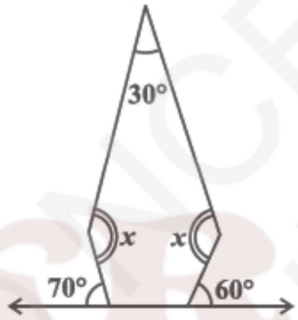
CLASS – VIII Mathematics (Understanding Quadrilaterals)

Choose correct option in questions 1 to 5.

1. State the name of a regular polygon of 3 sides.
   a. triangle b. quadrilateral
   c. pentagon d. hexagon

2. Solve: 8y = 32
   a. 3 b. 4
   c. 24 d. 40

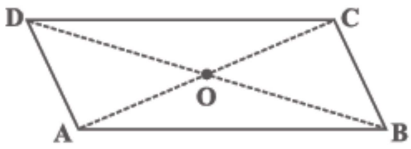
3. Find the angle measure *x* in the following figure:



   a. 120º b. 45º
   c. 140º d. 90º

4. How many sides does a regular polygon have if the measure of an exterior angle is 24°?
   a. 10 b. 12
   c. 14 d. 15

5. Given a parallelogram ABCD.



   ∠DAB + ∠CDA = ...
   a. 180º b. 90º
   c. 360º d. none of these

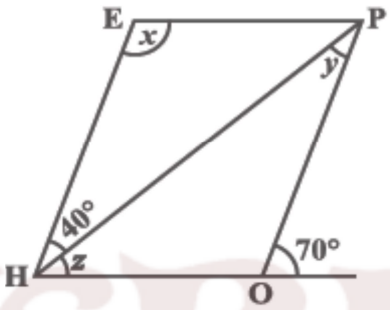
Fill in the blanks:

6. The interior has a _____.
7. The sum of the measures of the external angles of any polygon is _____.
8. The _____ in a parallelogram are supplementary.
9. The diagonals of a _____ are of equal length.

10. Find the values of the unknowns x, y, z.

11. State whether True or False.
    a. All squares are not parallelograms.
    b. All squares are trapeziums.

12. The following figure HOPE is a parallelogram. Find the angle measures x, y and z.



Answer key:

1. a
2. b
3. c
4. d
5. a
6. boundary
7. 360°
8. adjacent angles
9. rectangle
10. $x = 100°$; $y = 80°$; $z = 80°$
11. a. false
    b. true
12. $x = 110°$; $y = 40°$; $z = 30°$

CBSE Worksheet-15

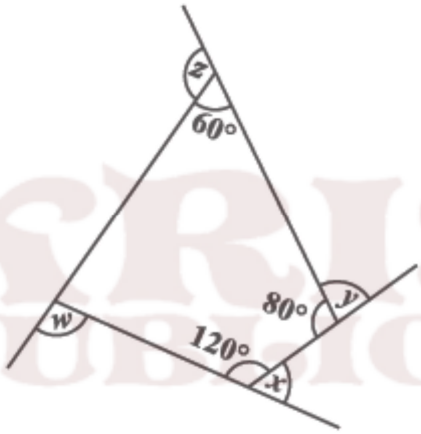
CLASS – VIII Mathematics (Understanding Quadrilaterals)

Choose correct option in questions 1 to 5.

1. State the name of a regular polygon of 4 sides.
   a. quadrilateral b. pentagon
   c. hexagon d. heptagon

2. Solve: 8y = 32
   a. 3 b. 4
   c. 24 d. 40

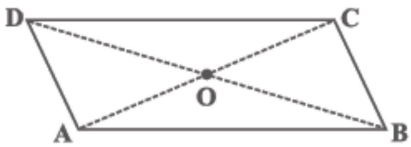
3. Find *x + y + z + w.*



   a. 180º b. 540º
   c. 360º d. 720º

4. How many sides does a regular polygon have if each of its interior angles is 165°?
   a. 12 b. 36
   c. 48 d. 24

5. Given a parallelogram ABCD.



   OB = ...
   a. OD b. OA
   c. OC d. none of these

Fill in the blanks:

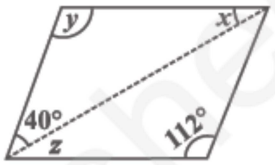
6. Polygons that are _____ have no portions of their diagonals in their exteriors.

7. _____ is a quadrilateral with a pair of parallel sides.

8. The _____ of a parallelogram bisect each other.

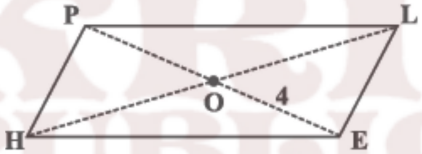
9. The diagonals of a _____ are perpendicular bisectors of each other.

10. Find the values of the unknowns x, y, z.



11. State whether True or False.
    a. All rhombuses are kites.
    b. All parallelograms are trapeziums.

12. In following figure, HELP is a parallelogram. (Lengths are in cms). Given that OE = 4 and HL is 5 more than PE? Find OH.



Answer key:

1. a
2. b
3. c
4. d
5. a
6. convex
7. Trapezium
8. diagonals
9. square
10. $y = 112°$; $x = 28°$; $z = 28°$
11. a. True
    b. True
12. OH = 6.5 cm

CBSE Worksheet-16

CLASS – VIII Mathematics (Practical Geometry)

1. Construct a quadrilateral PQRS where PQ = 4 cm, QR = 6 cm, RS = 5 cm, PS = 5.5 cm and PR = 7 cm.

2. Construct a quadrilateral ABCD, given that BC = 4.5 cm, AD = 5.5 cm, CD = 5 cm the diagonal AC = 5.5 cm and diagonal BD = 7 cm.

3. Construct a quadrilateral MIST where MI = 3.5 cm, IS = 6.5 cm, $\angle M = 75°$, $\angle I = 105°$ and $\angle S = 120°$.

4. Construct a quadrilateral ABCD, where AB = 4 cm, BC = 5 cm, CD = 6.5 cm and $\angle B = 105°$ and $\angle C = 80°$.

5. Draw a square of side 4.5 cm.

CBSE Worksheet-17

CLASS – VIII Mathematics (Practical Geometry)

1. Construct the quadrilateral LIFT where LI = 4 cm, IF = 3 cm, TL = 2.5 cm, LF = 4.5 cm and IT = 4 cm.

2. Construct the quadrilateral LIFT where LI = 4 cm, IF = 3 cm, TL = 2.5 cm, LF = 4.5 cm and IT = 4 cm.

3. Construct the quadrilateral MORE where MO = 6 cm, OR = 4.5 cm, $\angle M = 60°$, $\angle O = 105°$ and $\angle R = 105°$.

4. Construct the quadrilateral DEAR where DE = 4 cm, EA = 5 cm, AR = 4.5 cm, $\angle E = 60°$ and $\angle A = 90°$.

5. Draw the square READ with RE = 5.1 cm.

CBSE Worksheet-18

CLASS – VIII Mathematics (Practical Geometry)

1. Construct the parallelogram MORE where OR = 6 cm, RE = 4.5 cm and EO = 7.5 cm.

2. Construct the quadrilateral JUMP where JU = 3.5 cm, UM = 4 cm, MP = 5 cm, PJ = 4.5 cm and PU = 6.5 cm.

3. Construct the quadrilateral GOLD where OL = 7.5 cm, GL = 6 cm, GD = 6 cm, LD = 5 cm and OD = 10 cm.

4. Construct the quadrilateral PLAN where PL = 4 cm, LA = 6.5 cm, $\angle P = 90°$, $\angle A = 110°$ and $\angle N = 85°$.

5. Construct the quadrilateral TRUE where TR = 3.5 cm, RU = 3 cm, UE = 4 cm, $\angle R = 75°$ and $\angle U = 120°$.

6. Draw a rhombus whose diagonals are 5.2 cm and 6.4 cm long.

CBSE Worksheet-19

CLASS – VIII Mathematics (Practical Geometry)

1. Construct the rhombus BEST where BE = 4.5 cm and ET = 6 cm.

2. Construct the rhombus BEND where BN = 5.6 cm and DE = 6.5 cm.

3. Construct the parallelogram HEAR where HE = 5 cm, EA = 6 cm and $\angle R = 85°$.

4. Construct the quadrilateral DEAR where DE = 4 cm, EA = 5 cm, AR = 4.5 cm, $\angle E = 60°$ and $\angle A = 90°$.

5. Draw a rectangle with adjacent sides of lengths 5 cm and 4 cm.

CBSE Worksheet-20

CLASS – VIII Mathematics (Practical Geometry)

1. Construct the quadrilateral ABCD where AB = 4.5 cm, BC = 5.5 cm, CD = 4 cm, AD = 6 cm and AC = 7 cm.

2. Draw a parallelogram OKAY where OK = 5.5 cm and KA = 4.2 cm.

3. Construct the quadrilateral TRUE where TR = 3.5 cm, RU = 3 cm, UE = 4 cm, $\angle R = 75°$ and $\angle U = 120°$.

4. Construct the rectangle OKAY where OK = 7 cm and KA = 5 cm.

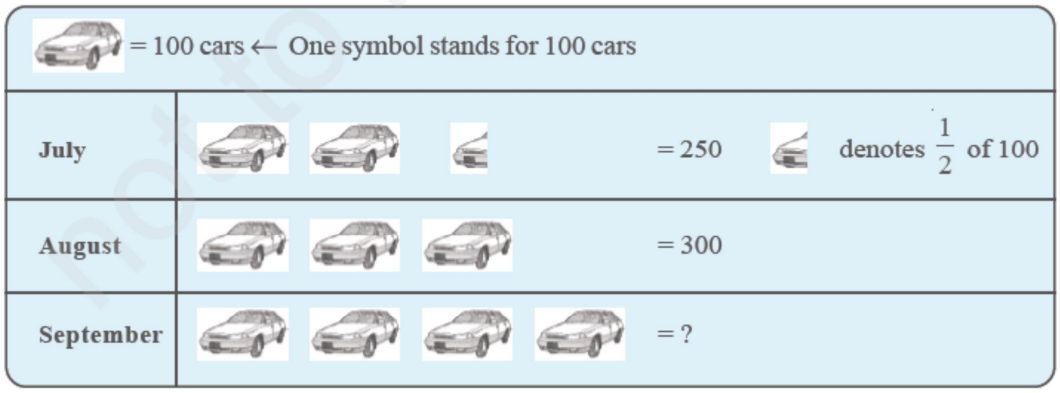
5. Construct the rhombus BEST where BE = 4.5 cm and ET = 6 cm.

CBSE Worksheet-21

CLASS – VIII Mathematics (Data Handling)

1. Data available to us is in an unorganised form called _____.

2. Read the pictograph.



Answer the following questions:

a. How many cars were produced in the month of July?

b. In which month were maximum number of cars produced?

c. In which month were minimum number of cars produced?

3. What is frequency?

4. Study the following frequency distribution table and answer the questions given below.

Frequency Distribution of Daily Income of 550 workers of a factory

Class Interval (Daily Income in Rupees)	**Frequency (Number of workers)**
100-125	45
125-150	25
150-175	55
175-200	125
200-225	140
225-250	55
250-275	35
275-300	50
300-325	20
Total	**550**

a. What is the size of the class intervals?

b. Which class has the highest frequency?

5. What does a circle graph shows?

6. If you try to start a scooter, what are the possible outcomes?

Answer Key:

1. raw data

2. a. 250
   b. September
   c. July

3. Frequency gives the number of times that a particular entry occurs.

4. a. 25
   b. 200-225

5. A circle graph shows the relationship between a whole and its parts.

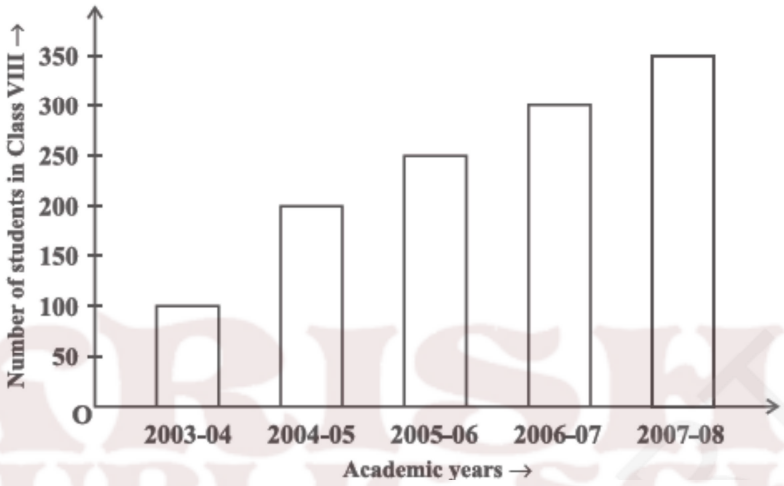
6. It will start or not

CBSE Worksheet-22

CLASS – VIII Mathematics (Data Handling)

1. In order to draw meaningful inferences from any data, we need to _____ the data systematically.

2. Read the bar graph.



Answer the following questions:

a. What is the information given by the bar graph?

b. In which year is the increase in the number of students maximum?

c. In which year is the number of students maximum?

3. What is an event?

4. Study the following frequency distribution table and answer the questions given below.

Frequency Distribution of Daily Income of 550 workers of a factory

Class Interval (Daily Income in Rupees)	**Frequency (Number of workers)**
100-125	45
125-150	25
150-175	55
175-200	125
200-225	140
225-250	55
250-275	35
275-300	50
300-325	20
Total	**550**

a. Which class has the lowest frequency?

b. What is the upper limit of the class interval 250-275?

c. Which two classes have the same frequency?

5. Which type of data can be represented by histogram?

6. When a die is thrown, what are the six possible outcomes?

7. Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of getting a number 6?

Answer Key:

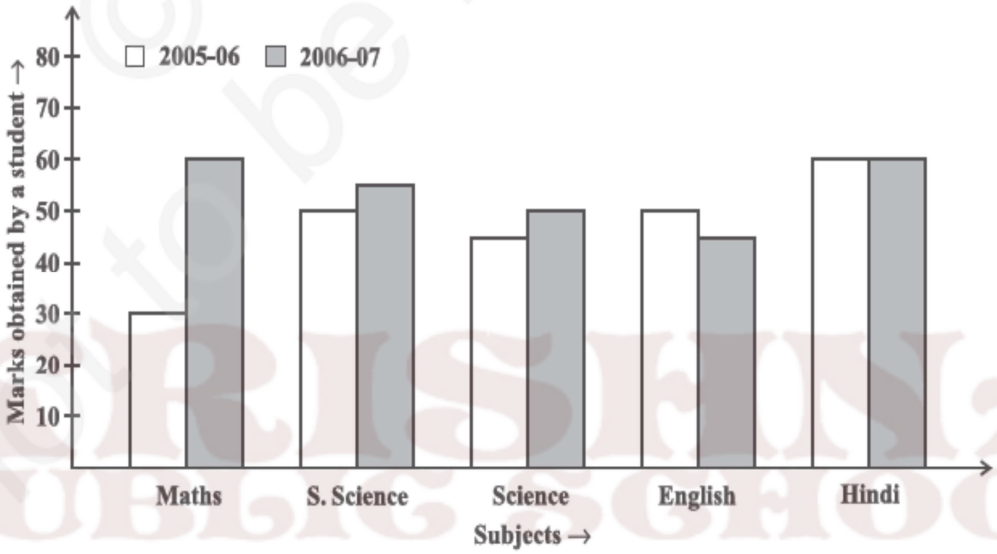
1. organise
2. a. Number of students in class VIII in academic years from 2003 to 2008.
   b. 2004-2005
   c. 2007-2008
3. Each outcome of an experiment or a collection of outcomes make an **event**.
4. a. 300-325
   b. 275
5. Grouped data can be presented using **histogram**.
6. 1, 2, 3, 4, 5 and 6
7. $\frac{1}{10}$

CBSE Worksheet-23

CLASS – VIII Mathematics (Data Handling)

1. A display of information using _____ of uniform width, their heights being proportional to the respective values.

2. Read the double bar graph.



Answer the following questions:

a. What is the information given by the double bar graph?

b. In which subject has the performance improved the most?

c. In which subject has the performance deteriorated?

d. In which subject is the performance at par?

3. What is an event?

4. Study the following frequency distribution table and answer the questions given below.

Frequency Distribution of Daily Income of 550 workers of a factory

Class Interval (Daily Income in Rupees)	**Frequency (Number of workers)**
100-125	45
125-150	25
150-175	55
175-200	125
200-225	140
225-250	55
250-275	35
275-300	50
300-325	20
Total	**550**

a. Which class has the lowest frequency?

b. What is the upper limit of the class interval 250-275?

5. What does height of bar graph represent?

6. When a die is thrown, what is the probability of getting the number 7?

7. Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of getting a number less than 6?

Answer Key:

1. bars
2. a. Marks obtained by a student in 5 subjects.
   b. Maths
   c. English
   d. Hindi
3. Each outcome of an experiment or a collection of outcomes make an **event**.
4. a. 300-325
   b. 275
5. The **height** of the bars show the **frequency** of the class-interval.
6. 0
7. $\frac{5}{6}$

CBSE Worksheet-24

CLASS – VIII Mathematics (Data Handling)

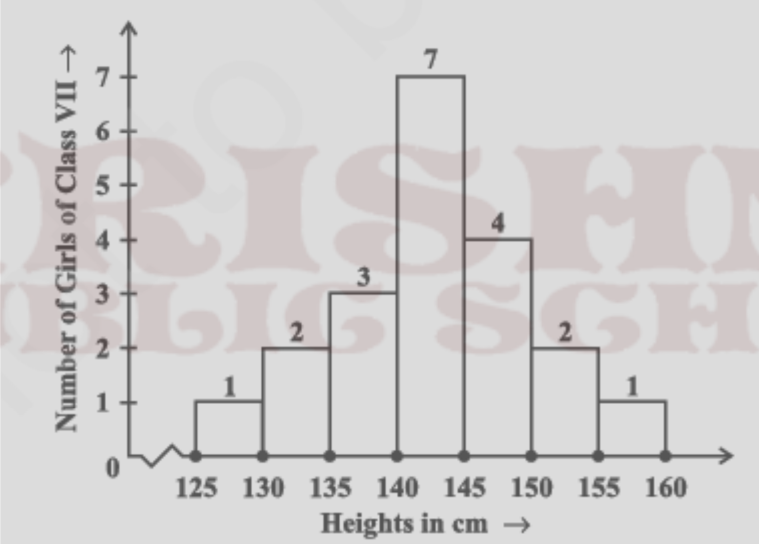
1. A double bar graph is useful for the _____ of the data.

2. A group of students were asked to say which animal they would like most to have as a pet. The results are given below:
dog, cat, cat, fish, cat, rabbit, dog, cat, rabbit, dog, cat, dog, dog, dog, cat, cow, fish, rabbit, dog, cat, dog, cat, cat, dog, rabbit, cat, fish, dog.

   Make a frequency distribution table for the same.

3. What is the lower and upper class limit in the class-interval 200-225?

4. Observe the histogram and answer the questions given below.



   a. Which group contains maximum girls?
   b. How many girls have a height of 145 cms and more?

5. What is the size of each sector of circle graph?

6. What is the probability of getting a number 1 through 6?

7. Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of getting a 1-digit number?

Answer Key:

1. comparison
3. Lower class limit = 200, upper class limit = 225
4. a. 140-145
   b. 7
5. The size of each sector in circle graph is proportional to the activity or information it represents.
6. 1
7. $\frac{9}{10}$

CBSE Worksheet-25

CLASS – VIII Mathematics (Data Handling)

1. _____ can be 'grouped' and presented systematically through 'grouped frequency distribution'.

2. For which of these would you use a histogram to show the data? **Give reasons for each.**

   a. The number of letters for different areas in a postman's bag.
   b. The height of competitors in an athletics meet.
   c. The number of cassettes produced by 5 companies.
   d. The number of passengers boarding trains from 7:00 a.m. to 7:00 p.m. at a station.

3. What is an equally likely outcome?

4. Draw a pie chart of the data given below.
   The time spent by a child during a day.
   Sleep — 8 hours
   School — 6 hours
   Home work — 4 hours
   Play — 4 hours
   Others — 2 hours

5. What is a random experiment?

6. What is the probability of getting a number 1 through 6?

7. Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of getting a 1-digit number?

Answer Key:

1. Raw data
2. b, d. In all these cases data can be divided into class intervals.
3. Outcomes of an experiment are **equally likely** if each has the same chance of occurring.
5. A **random experiment** is one whose outcome cannot be predicted exactly in advance.
6. 1
7. $\frac{9}{10}$

CBSE Worksheet-26

CLASS – VIII Mathematics (Square and square roots)

Choose the correct option:

1. Which of the following is a perfect square number?
   a. 2061 b. 23453
   c. 222222 d. 1057

2. Which of the following would end with digit 1?
   a. 123^2 b. 161^2
   c. 82^2 d. 77^2

3. The squares of which of the following would be odd numbers?
   a. 434 b. 2826
   c. 7779 d. 82004

4. Without adding, find the sum.
   1 + 3 + 5 + 7 + 9
   a. 16 b. 9
   c. 36 d. 25

5. Without doing any calculation, find the numbers which are surely perfect squares.
   a. 441 b. 257
   c. 408 d. 153

Fill in the blanks:

6. Numbers like 1, 4, 9, 16, 25 ... are known as _____.

7. All square numbers end with _____ at unit's place.

8. When a square number ends in _____, the number whose square it is, will have either 4 or 6 in unit's place.

9. Square numbers can only have _____ number of zeros at the end.

10. Find the perfect square numbers between 30 and 40.

11. Find the smallest number by which 9408 must be divided so that the quotient is a perfect square. Find the square root of the quotient.

12. Find the least number that must be subtracted from 5607 so as to get a perfect square. Also find the square root of the perfect square.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. square numbers
7. 0, 1, 4, 5, 6 or 9
8. 6
9. even
10. 36
11. The required smallest number is 3. 56
12. 131, 74

CBSE Worksheet-27

CLASS – VIII Mathematics (Square and square roots)

Choose the correct option:

1. What will be the number of zeros in the square of 60?
   a. 2 b. 1
   c. 3 d. 4

2. How many natural numbers lie between 9^2 and 10^2?
   a. 9 b. 18
   c. 27 d. 36

3. Find the square of 39.
   a. 78 b. 1500
   c. 1521 d. none of these

4. Without adding, find the sum.
   1 + 3 + 5 + 7 + 9 + I1 + 13
   a. 16 b. 25
   c. 36 d. 49

5. Find the square roots of 729.
   a. 27 b. 28
   c. 29 d. 30

Fill in the blanks:

6. In general, if a natural number *m* can be expressed as *n*2, where *n* is also a natural number, then *m* is a _____.

7. None of the square numbers end with _____ at unit's place.

8. If a number has 1 or 9 in the unit's place, then it's square ends in _____.

9. _____ is the inverse operation of square.

10. Find the perfect square numbers between 50 and 60.

11. 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

12. Find the greatest 4-digit number which is a perfect square.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. square number
7. 2, 3, 7 or 8
8. 1
9. Square root
10. No number
11. 45
12. 9801

CBSE Worksheet-28

CLASS – VIII Mathematics (Square and square roots)

Choose the correct option:

1. What will be the number of zeros in the square of 400?
   a. 4 b. 3
   c. 2 d. 1

2. How many natural numbers lie between 11^2 and 12^2?
   a. 11 b. 22
   c. 33 d. 44

3. Find the square of 42.
   a. 84 b. 1700
   c. 1764 d. none of these

4. Without adding, find the sum.
   1 + 3 + 5 + 7 + 9 + I1 + 13 + 15 + 17 +19
   a. 49 b. 64
   c. 81 d. 100

5. Find the square roots of 529.
   a. 23 b. 22
   c. 20 d. 19

Fill in the blanks:

6. 32 is not a _____ number.

7. All square numbers end with _____ at unit's place.

8. If a number has 2 or 8 in the unit's place, then it's square ends in _____.

9. 19^2 would have digit _____ at unit place.

10. Find the perfect square numbers between 60 and 70.

11. Find the smallest square number that is divisible by each of the numbers 4, 9 and 10.

12. Find the least number that must be added to 1300 so as to get a perfect square. Also find the square root of the perfect square.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. square
7. 0, 1, 4, 5, 6 or 9
8. 4
9. 1
10. 64
11. 900
12. 69, 37

CBSE Worksheet-29

CLASS – VIII Mathematics (Square and square roots)

Choose the correct option:

1. What will be the number of zeros in the square of 30?
   a. 2 b. 4
   c. 3 d. 1

2. How many natural numbers lie between 100^2 and 101^2?
   a. 100 b. 200
   c. 300 d. 400

3. Find the square of 48.
   a. 96 b. 2200
   c. 2304 d. none of these

4. Without adding, find the sum.
   1 + 3 + 5 + 7 + 9 + I1 + 13 + 15 + 17
   a. 36 b. 49
   c. 64 d. 81

5. Find the square roots of 484.
   a. 22 b. 23
   c. 24 d. 25

Fill in the blanks:

6. If a natural number cannot be expressed as a sum of successive odd natural numbers starting with 1, then it is not a _____.

7. If a number contains 3 zeros at the end, its square have _____ zeros.

8. If a number has 3 or 7 in the unit's place, then it's square ends in _____.

9. 24^2 would have digit _____ at unit place.

10. Find the perfect square numbers between 80 and 90.

11. Find the smallest square number that is divisible by each of the numbers 8, 15 and 20.

12. A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. perfect square
7. 6
8. 9
9. 6
10. 81
11. 3600
12. 24 plants

CBSE Worksheet-30

CLASS – VIII Mathematics (Square and square roots)

Choose the correct option:

1. What will be the number of zeros in the square of 5000?
   a. 6 b. 4
   c. 2 d. 0

2. How many natural numbers lie between 201^2 and 202^2?
   a. 201 b. 402
   c. 603 d. 804

3. Find the square of 39.
   a. 78 b. 1500
   c. 1521 d. none of these

4. Without adding, find the sum. 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23
   a. 81 b. 100
   c. 121 d. 144

5. Find the square roots of 1225.
   a. 35 b. 36
   c. 37 d. 38

Fill in the blanks:

6. The unit digit of the square of 1234 is _____.

7. If a number contains 5 zeros at the end, its square have _____ zeros.

8. If a number has 5 in the unit's place, then it's square ends in _____.

9. 36^2 would have digit _____ at unit place.

10. Find the perfect square numbers between 120 and 130.

11. The students of Class VIII of a school donated Rs 2401 in all, for Prime Minister's National Relief Fund. Each student donated as many rupees as the number of students in the class. Find the number of students in the class.

12. There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children would be left out in this arrangement.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. 6
7. 10
8. 5
9. 6
10. 121
11. 49
12. 16 children

CBSE Worksheet-31

CLASS – VIII Mathematics (Cube and cube roots)

Choose the correct option:

1. Find the cube of 75.
   a. 421875 b. 5625
   c. 400175 d. 417675

2. Find the prime factorisation of 175616.
   a. $2^3 \times 2^3 \times 3^3 \times 7^3$ b. $2^3 \times 2^3 \times 2^3 \times 7^3$
   c. $2^3 \times 3^3 \times 5^3 \times 7^3$ d. $2^3 \times 3^3 \times 3^3 \times 7^3$

3. What is the cube of double of 'a'?
   a. 2a b. $4a^2$
   c. $8a^3$ d. $16a^3$

4. Find the ones digit of cube root of 2197.
   a. 7 b. 5
   c. 9 d. 3

5. Find the cubes of 2x, 3x and 4x.
   a. $8x^3$, $16x^3$, $64x^3$ b. $4x^3$, $9x^3$, $16x^3$
   c. $8x^2$, $27x^2$, $64x^2$ d. $4x^2$, $9x^2$, $16x^2$

Fill in the blanks:

6. The numbers 1, 8, 27... are _____.

7. A natural number is said to be a perfect cube, if it is the cube of some _____.

8. If 'a' is a non-zero number, then $a \times a \times a = a^3$ is called _____ of 'a'.

9. $36x$ is a perfect cube number, then x = _____

10. Express 6^3 as the sum of odd numbers.

11. Is 53240 a perfect cube? If not, then by which smallest natural number should 53240 be divided so that the quotient is a perfect cube?

12. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. cube numbers
7. natural number
8. cube
9. 6
10. 31 + 33 + 35 + 37 + 39 + 41
11. No, 5
12. No, 5

CBSE Worksheet-32

CLASS – VIII Mathematics (Cube and cube roots)

Choose the correct option:

1. Find the cube of 75.
   a. 421875 b. 5625
   c. 400175 d. 417675

2. If $(2744)^{1/3} = 2p + 2$, then the value of p is
   a. 3 b. 6
   c. 2 d. 8

State true or false:

3. 8640 is a perfect cube.
4. No perfect cube can end with exactly two zeros.
5. If a divides b, then a^3 divides b^3.

Fill in the blanks:

6. If $n = m \times m \times m = m^3$, where m is an integer, then n is a perfect cube and the number m is called the _____ of n.

7. The cube root of 13824 is _____.

8. If $\sqrt[3]{\frac{x}{y}} = \frac{2}{3}$, then $\frac{x}{y}$ = _____.

9. The square of a natural number subtracts from its cube comes 100. The number is _____.

10. Find the cube root of 0.001331.

11. Find the smallest number by which 54 must be multiplied so that the product is a perfect cube.

12. Three numbers are in the ratio of **2 : 3 : 4** and the sum of their cubes is 33957. Find the numbers.

Answer Key:

1. a
2. b
3. False
4. True
5. True
6. cube root
7. 24
8. $\frac{8}{27}$
9. 5
10. 0.11
11. 4
12. 14, 21 and 28

CBSE Worksheet-33

CLASS – VIII Mathematics (Cube and cube roots)

Choose the correct option:

1. Find the cube root of -5832.
   a. -18 b. 18
   c. 27 d. -27

2. The cube root of the 216 x (–32) x 54 is _____.
   a. – 36 b. – 72
   c. – 48 d. – 54

State true or false:

3. Cubes of a Prime Number are prime.
4. Cubes of all even natural numbers are even.
5. Cubes of all negative integers are positive integers.

Fill in the blanks:

6. If x is ones digit and y is tens digit of a two digit number, then the cube of the number will be _____.

7. A natural number is said to be a perfect cube, if it is the cube of some _____.

8. If (504 + p) is a perfect cube number, whose cube root is p, then p = _____.

9. 23 is a cube root of _____.

10. Find the side of the cubical box whose volume is 474.552 dm^3.

11. Evaluate: $\left[\left\{24^2 + 7^2\right\}^{1/2}\right]^3$

12. Divide 5673375 by the smallest number so that the product is perfect cube. Also find out the cube root of the resulting number.

Answer Key:

1. a
2. b
3. False
4. True
5. False
6. $(10y + x)^3$
7. natural number
8. 8
9. 12167
10. 7.8 dm
11. 15625
12. 41, 15

CBSE Worksheet-34

CLASS – VIII Mathematics (Cube and cube roots)

Choose the correct option:

1. Find the value of $\sqrt[3]{\sqrt{0.000064}}$.
   a. 0.2 b. 0.02
   c. 0.3 d. 0.03

2. Ones place digit in the cube of 5832 is _____.
   a. 2 b. 8
   c. 4 d. 7

3. Find the cube root of $\frac{686}{-3456}$.
   a. $-\frac{7}{13}$ b. $-\frac{14}{26}$
   c. $-\frac{7}{12}$ d. $-\frac{7}{24}$

4. Which is/are the following are not perfect cube number/s?
   a. 216 b. 343
   c. 1000 d. 128

5. **State true or false :** Cubes of a Prime Number are prime.

Fill in the blanks:

6. The smallest number by which the number 192 must be divided to obtain a perfect cube is _____.

7. In the prime factorisation of a perfect cube, every _____ occurs three times or a multiple of three times.

8. If 'a' is a non-zero number, then $a \times a \times a = a^3$ is called _____ of 'a'.

9. $36x$ is a perfect cube number, then x = _____

10. The volume of a cube is 9261 cm^3. Find the side of the cube.

11. Find the smallest number which when multiplied with 137592 will make the product a perfect cube. Further find the cube root of the product.

12. Find the value of $125\sqrt[3]{a^6} - \sqrt[3]{125a^6}$, when a = 2

Answer Key:

1. a
2. b
3. c
4. d
5. False
6. 3
7. Prime
8. cube
9. 6
10. 21 cm
11. 1183, 546
12. 480

CBSE Worksheet-35
CLASS – VIII Mathematics (Cube and cube roots)

Choose the correct option:

1. Which among the following is the greatest?
   a. $\left(\frac{7}{5}\right)^3$ b. $\sqrt[3]{\frac{729}{8}}$
   c. $\sqrt[3]{\frac{2197}{729}}$ d. $\sqrt[3]{\frac{166375}{343}}$

2. Find the cube of 75.
   a. 5625 b. 421875
   c. 400175 d. 417675

3. Find the cube root of 175616.
   a. 26 b. 36
   c. 56 d. 66

4. Find the cube root of 140 × 2450.
   a. 65 b. 45
   c. 55 d. 70

5. The cube root of $2^3 \times 2^3 \times 2^3 \times 7^3$ is _____.
   a. 56 b. 76
   c. 16 d. 6

Fill in the blanks:

6. Ones digit of cube of a number depends on the _____ of the number.
7. For a perfect cube number, primes should be in _____.
8. If any prime is not in triplet, then we have to multiply or divide by this _____ to make complete triplets.
9. If $x^3 = 9261$, then x = ……

10. If $x^3 = \frac{729}{2197}$ and $y^3 = \frac{9261}{42875}$, then find x + y.

11. Find the smallest number by which 243 must be multiplied to obtain a perfect cube.

12. Evaluate the following:
    a. $\sqrt[3]{\frac{0.027}{0.008}} \div \sqrt{\frac{0.09}{0.04}} - 1$
    b. $\sqrt[3]{0.125} + \sqrt[3]{\frac{1}{0.008}} - \sqrt[3]{0.1 \times 0.1 \times 0.1 \times 1.3 \times 1.3 \times 1.3}$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. ones digit
7. triplets
8. prime
9. 21
10. $\frac{84}{65}$
11. 3
12. a. 0
    b. 5.37

CBSE Worksheet-36

CLASS – VIII Mathematics (Comparing quantities)

Choose the correct option:

1. Find the ratio of speed of a cycle 15 km per hour to the speed of scooter 30 km per hour.
   a. 1:2 b. 2:1
   c. 1:3 d. 3:1

2. The price of a scooter was Rs 34,000 last year. It has increased by 20% this year. What is the price now?
   a. Rs 30,800 b. Rs 40,800
   c. Rs 30,400 d. Rs 40,400

3. Rohan bought a second hand refrigerator for Rs 2,500, then spent Rs 500 on its repairs and sold it for Rs 3,300. Find his loss or gain per cent.
   a. Loss 10 5 b. Profit 15 %
   c. Profit 10% d. Loss 15 %

Fill in the blanks:

4. _____ means comparing two quantities.

5. A picnic is being planned in a school for Class VII. Girls are 60% of the total number of students and are 18 in number. Find the ratio of the number of girls to the number of boys in the class.

6. A shopkeeper purchased 200 bulbs for Rs 10 each. However 5 bulbs were fused and had to be thrown away. The remaining were sold at Rs 12 each. Find the gain or loss %.

7. During a sale, a shop offered a discount of 10% on the marked prices of all the items. What would a customer have to pay for a pair of jeans marked at Rs 1450 and two shirts marked at Rs 850 each?

8. The population of a city was 20,000 in the year 1997. It increased at the rate of 5% p.a. Find the population at the end of the year 2000.

9. Calculate the amount and compound interest on Rs 10,800 for 3 years at 12.5 % per annum compounded annually.

Answer Key:

1. a
2. b
3. c
4. Ratio
7. triplets
5. 3:2
6. 17%
7. Rs 2,835
8. 23153
9. Amount = Rs 15,377.34; Compound interest = Rs 4,577.34

CBSE Worksheet-37

CLASS – VIII Mathematics (Comparing quantities)

Choose the correct option:

1. Find the ratio of 5 m to 10 km.
   a. 1:2000 b. 2000:1
   c. 1:3 d. 3000:1

2. An item marked at Rs 840 is sold for Rs 714. What is the discount %?
   a. 10% b. 15%
   c. 20% d. 25 %

3. Find selling price (SP) if a profit of 5% is made on a cycle of Rs 700 with Rs 50 as overhead charges.
   a. Rs 600 b. Rs 780
   c. Rs 787.50 d. Rs 750

Fill in the blanks:

4. _____ means comparing two quantities.

5. 72% of 25 students are good in mathematics. How many are not good in mathematics?

6. Sheela bought two fans for Rs 1200 each. She sold one at a loss of 5% and the other at a profit of 10%. Find the selling price of each. Also find out the total profit or loss.

7. Calculate the amount and compound interest on Rs 8,000 for 1 year at 9% per annum compounded half yearly.

8. Kamala borrowed Rs 26,400 from a Bank to buy a scooter at a rate of 15% p.a. compounded yearly. What amount will she pay at the end of 2 years and 4 months to clear the loan?

9. A milkman sold two of his buffaloes for Rs 20,000 each. On one he made a gain of 5% and on the other a loss of 10%. Find his overall gain or loss.

Answer Key:

1. a
2. b
3. c
4. Ratio
5. 28% students
6. Rs 1140, Rs 1320, Profit = Rs 60
7. Amount = Rs 8,736.20, Interest = Rs 736.20
8. Rs 36,659.70
9. Loss of Rs 1,269.84

CBSE Worksheet-38

CLASS – VIII Mathematics (Comparing quantities)

Choose the correct option:

1. Find the ratio of 50 paise to Rs 5.
   a. 1:10 b. 10:1
   c. 1:5 d. 5:1

2. The list price of a frock is Rs 220. A discount of 20% is announced on sales. What is the amount of discount?
   a. Rs 34 b. Rs 44
   c. Rs 55 d. Rs 22

3. Find selling price (SP) if a profit of 5% is made on a lawn mower bought at Rs 1150 with Rs 50 as transportation charges.
   a. Rs 1200 b. Rs 1140
   c. Rs 1260 d. Rs 1100

Fill in the blanks:

4. _____ means comparing two quantities.

5. A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?

6. The price of a TV is Rs 13,000. The sales tax charged on it is at the rate of 12%. Find the amount that Vinod will have to pay if he buys it.

7. Find CI on Rs 12600 for 2 years at 10% per annum compounded annually.

8. A TV was bought at a price of Rs 21,000. After one year the value of the TV was depreciated by 5% (Depreciation means reduction of value due to use and age of the item). Find the value of the TV after one year.

9. Meenu bought two fans for Rs 1200 each. She sold one at a loss of 5% and the other at a profit of 10%. Find the selling price of each. Also find out the total profit or loss.

Answer Key:

1. a
2. b
3. c
4. Ratio
5. 25 matches
6. Rs 14,560
7. Rs 2646
8. Rs 19,950
9. Profit of Rs 60.

CBSE Worksheet-39

CLASS – VIII Mathematics (Comparing quantities)

Choose the correct option:

1. Find the ratio of 5 km to 10 m.
   a. 500:1 b. 1:500
   c. 1:20 d. 20:1

2. The list price of a frock is Rs 220. A discount of 20% is announced on sales. What is the sale price?
   a. Rs 144 b. Rs 176
   c. Rs 154 d. Rs 122

3. Find selling price (SP) if a profit of 5% is made on a fan bought for Rs 560 and expenses of Rs 40 made on its repairs.
   a. Rs 600 b. Rs 540
   c. Rs 630 d. Rs 500

Fill in the blanks:

4. _____ means comparing two quantities.

5. If Shilpa had Rs 600 left after spending 75% of her money, how much did she have in the beginning?

6. I purchased a hair-dryer for Rs 5,400 including 8% VAT. Find the price before VAT was added.

7. Find the time period and rate for a sum taken for 2 years at 4% per annum compounded half yearly.

8. Fabina borrows Rs 12,500 at 12% per annum for 3 years at simple interest and Radha borrows the same amount for the same time period at 10% per annum, compounded annually. Who pays more interest and by how much?

Answer Key:

1. a
2. b
3. c
4. Ratio
5. Rs 2400
6. Rs 5,000
7. Time period = 4, rate = 2% half yearly
8. Fabina pays Rs 362.50 more

CBSE Worksheet-40

CLASS – VIII Mathematics (Comparing quantities)

Choose the correct option:

1. Find the ratio of Rs 6 to 50 paise.
   a. 12:1 b. 1:12
   c. 1:30 d. 30:1

2. A table marked at Rs 15,000 is available for Rs 14,400. Find the discount per cent.
   a. 2 % b. 4 %
   c. 5 % d. 8 %

3. A football team won 10 matches out of the total number of matches they played. If their win percentage was 40, then how many matches did they play in all?
   a. 26% b. 30%
   c. 28% d. 20%

Fill in the blanks:

4. _____ means comparing two quantities.

5. If 60% people in a city like cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.

6. A shopkeeper bought two TV sets at Rs 10,000 each. He sold one at a profit 10% and the other at a loss of 10%. Find whether he made an overall profit or loss.

7. A milkman sold two of his buffaloes for Rs 20,000 each. On one he made a gain of 5% and on the other a loss of 10%. Find his overall gain or loss.

8. Vasudev invested Rs 60,000 at an interest rate of 12% per annum compounded half yearly. What amount would he get after 6 months?

9. A scooter was bought at Rs 42,000. Its value depreciated at the rate of 8% per annum. Find its value after one year.

Answer Key:

1. a
2. b
3. c
4. Ratio
5. 10%, cricket → 30 lakh; football → 15 lakh; other games → 5 lakh
6. No profit no loss
7. Loss of Rs 1,269.84
8. Rs 63,600
9. Rs 38,640

CBSE Worksheet-41

CLASS – VIII Mathematics (Algebraic Expressions and Identities)

Choose the correct option:

1. Which of the following is an expression?
   a. $4x + 7$ b. 3
   c. ½ d. 30

2. Which of the following is a binomial?
   a. $3x$ b. $2x + 7$
   c. $4x + y + 2$ d. $7 - 3x + 4$

3. Which of the following is like term as $7xy$?
   a. $9x$ b. $9y$
   c. $9xy$ d. 9

4. Add: $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$, $-3xz + 5x - 2xy$.
   a. $5xy + 9yz + 2zx + 5x - 4y$ b. $5xy + 9yz + 3zx + 4y$
   c. $5xy + 3zx + 5x - 4y$ d. $5xy + 9yz + 3zx + 5x - 4y$

Fill in the blanks:

5. Terms are added to form _____.

6. Expression that contains only one term is called a _____.

State true or false

7. The value of an expression changes with the value chosen for the variables it contains.

8. Using identity $(x - a)(x + a) = x^2 - a^2$ find $6^2 - 5^2$.

9. Simplify: $(xy + yz)^2 - (xy - yz)^2$

10. Simplify $(xy + yz)^2 - 2x^2y^2z$. Find the value when $x = -1$, $y = 1$ and $z = 2$.

Answer Key:

1. a
2. b
3. c
4. d
5. expressions
6. monomial
7. True
8. 11
9. $4xy^2z$
10. -3

CBSE Worksheet-42

CLASS – VIII Mathematics (Algebraic Expressions and Identities)

Choose the correct option:

1. Which of the following is an expression?
   a. 3x – 2 b. 2
   c. ½ d. 3

2. Which of the following is a monomial?
   a. 2x + 7 b. 3x
   c. 4x + y +2 d. 7 – 3x + 4

3. Which of the following is like term as $4a^2b$?
   a. 9a b. 9b
   c. $9a^2b$ d. $9a^2$

4. Subtract $7x – 3x^2$ from $4x + 8x^2$.
   a. – 3x b. $11x^2$
   c. $11x^2 – 5x$ d. $11x^2 – 3x$

Fill in the blanks:

5. Expressions consists of _____ & _____.
6. When numbers/literals are added or subtracted, they are called _____.

State true or false

7. p (9 – p) = 9p – 2p

Solve the following

8. Simplify: (x + y) (2x – 3y + z) – (2x – 3y)z

9. Using suitable identity find the product of $\left(\frac{2}{3}x-5\right)\left(\frac{2}{3}x+5\right)$.

10. If $x+\frac{1}{x}=6$, find $x^2+\frac{1}{x^2}$.

Answer Key:

1. a
2. b
3. c
4. d
5. variables , constants
6. terms
7. False
8. $2x^2 - 3y^2 - xy - xz + 4yz$
9. $\frac{4}{9}x^2 - 25$
10. 34

CBSE Worksheet-43

CLASS – VIII Mathematics (Algebraic Expressions and Identities)

Choose the correct option:

1. Which of the following is an expression?
   a. 9ab +7 b. 7
   c. ¼ d. 9

2. Which of the following is a trinomial?
   a. 2x + 7 b. 7 – 3x + 4y
   c. 4x + y d. 3x

3. Which of the following is like term as $3xy^2$?
   a. 7x b. 7y
   c. $7xy^2$ d. $7y^2$

4. Subtract 3x (x – 4y + 5z) from 4x (2x – 3y + 10z).
   a. $5x^2$ b. 25xz
   c. $5x^2 + 25xy$ d. $5x^2 + 25xz$

Fill in the blanks:

5. While multiplying two monomials, Coefficient of product = _____ × _____.
6. When numbers/literals are multiplied, they are called _____.

State true or false

7. n (4 + m) = 4n + nm

Solve the following

8. Using identity evaluate 297 × 303.

9. Simplify: (1.5x – 4y)(1.5x + 4y +3) – 4.5x +12y

10. If x + y = 12 and xy = 32, find the value of $x^2 + y^2$.

Answer Key:

1. a
2. b
3. c
4. d
5. Coefficient of first monomial × coefficient of second monomial
6. factors
7. True
8. 89991
9. $2.25x^2 – 16y^2$
10. 80

CBSE Worksheet-44

CLASS – VIII Mathematics (Algebraic Expressions and Identities)

Choose the correct option:

1. $(x - a(x + a) = ?$
   a. $x^2 - a^2$ b. $x - a^2$
   c. $x + a^2$ d. $x^2 + a^2$

2. Which of the following is a trinomial?
   a. $2x + 7$ b. $3a + 4b + 5$
   c. $4x + y$ d. $3x$

3. Which of the following is like term as $7x^2y^2$?
   a. $7x$ b. $7y$
   c. $13x^2y^2$ d. $7y^2$

4. $501 \times 502 = ?$
   a. 251500 b. 250000
   c. 150000 d. 251502

Fill in the blanks:

5. An identity is an _____, which is true for all values of the variables in the equality.
6. While multiplying a polynomial by a monomial, we multiply every term in the polynomial by the _____.

State true or false

7. $n(4 + m) = 4n + nm$

Solve the following

8. Using Identity find $(4.9)^2$.

9. Simplify: $(1.5x - 4y)(1.5x + 4y + 3) - 4.5x + 12y$

10. Show that $\left(\frac{4}{3}m - \frac{3}{4}n\right)^2 + 2mn = \frac{16}{9}m^2 + \frac{9}{16}n^2$

Answer Key:

1. a
2. b
3. c
4. d
5. equality
6. monomial
7. True
8. 24.01
9. $2.25x^2 - 16y^2$

CBSE Worksheet-45

CLASS – VIII Mathematics (Algebraic Expressions and Identities)

Choose the correct option:

1. $(x + a)(x + a) = ?$
   a. $(x + a)^2$ b. $x - a^2$
   c. $x + a^2$ d. $x^2 + a^2$

2. Which of the following is a monomial?
   a. $2x + 7$ b. $3a$
   c. $4x + y$ d. $3x + 5y + 7$

3. Which of the following is like term as $6xyz$?
   a. $7xy$ b. $7yz$
   c. $7xyz$ d. $7xz$

4. $95 \times 103 = ?$
   a. 9700 b. 9600
   c. 9000 d. 9785

Fill in the blanks:

5. Coefficients of like terms need not be the _____.
6. A monomial multiplied by a monomial always gives a _____.

State true or false

7. $a(5 - b) = 5a - ab$

Solve the following

8. Using Identity find 78×82.

9. Simplify: $(4m + 5n)^2 + (5m + 4n)^2$

10. Show that $(a - b)(a + b) + (b - c)(b + c) + (c - a)(c + a) = 0$.

Answer Key:

1. a
2. b
3. c
4. d
5. same
6. monomial
7. True
8. 6396
9. $41m^2 + 80mn + 41n^2$

CBSE Worksheet-45

CLASS – VIII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. A three dimensional shape is _____ object.

2. The most important part of a map is the _____.

3. What is a hexogonal prism?

4. How many faces are there in a triangular prism?

5. A pyramid with square base has 5 faces and 8 edges. By Euler's formula, find the vertices of the pyramid.

6. Give two differences between a picture and a map.

7. Find the number of edges, vertices and faces in a rectangular pyramid.

Answer Key:

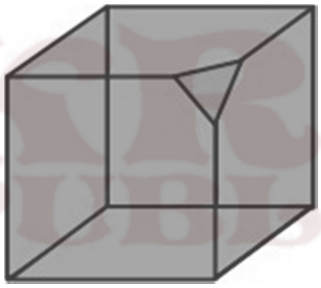
1. solid
2. scale
3. A hexagonal prism has a hexagon as its base.
4. 5
5. 5
6. a. A picture is a detailed representation of reality; whereas a map is a depiction of a place/object.
   b. In a picture perspective/reference is important; whereas in a map it is not important.
7. There are 8 edges, 5 faces and 5 vertices in a rectangular pyramid.

CBSE Worksheet-47

CLASS – VIII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. A two dimensional shape is _____ shape.
2. _____ are used to depict different objects/places in a map.
3. How many vertices are there in a pyramid with a square base?
4. What are the three views in a solid?
5. Can a polyhedron have 20 faces, 40 edges and 30 vertices?
6. State and verify the Euler's Formula for a rectangular prism.
7. Find the number of edges, vertices and faces in a given solid.



Answer Key:

1. plane
2. symbols
3. 5
4. Front view, side view and top view
5. No
7. There are 15 edges, 7 faces and 10 vertices in the solid.

CBSE Worksheet-48

CLASS – VIII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. A pentagonal prism has _____ faces, _____ edges and ____ vertices.

2. Give two basic differences between a prism and a pyramid.

3. How many edges are there in a cuboid?

4. What are regular polyhedrons?

5. Give two basic differences between a prism and a pyramid.

State true or false

6. In a map, places that are far & those that are near, will be of the same size to an observer.

7. If we add the dimension 'height' to a rectangle(with certain length & breadth),we obtain a cuboid.

Answer Key:

1. Faces: 7, Edges: 15, Vertices: 10
2. a. Prism is a polyhedron in which the base & top are regular polygons; whereas a pyramid is a polyhedron in which the base is a polygon.
   b. In a prism the lateral surfaces are parallelograms; whereas in a pyramid, the lateral surfaces are triangles.
3. 12
4. A polyhedron is said to be regular if its faces are made up of regular polygons and the same number of faces meet a vertex.
5. a. Prism is a polyhedron in which the base and top are congruent polygons; whereas a pyramid is a polyhedron in which the base is a polygon.
   b. In a prism the lateral faces are parallelograms; whereas in a pyramid, the lateral surfaces are triangles with a common vertex.
6. True
7. True

CBSE Worksheet-49

CLASS – VIII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. A two dimensional shape is _____ shape.

2. Give the importance of the scale in a map.

3. How many edges are there in a triangular pyramid?

4. What are two-dimensional shapes?

5. Can a polyhedron have for its faces:
   a. 3 triangles?
   b. a square and four triangles?

6. State and verify the Euler's Formula for a cube.

7. By using Euler's formula find the unknown.
   a. Vertices = 12, Faces = 4, Edges =?
   b. Faces = 5, Edges = 8, Vertices =?
   c. Edges = 2, Vertices = 3, Faces =?

Answer Key:

1. plane
2. a. A scale helps in maintaining a proportion between distances on a map and actual distances.
   b. A scale can vary from map to map but not within the same map.
3. 6
4. These are plane shapes having i.e., length & breadth.
5. a. No, such a polyhedron is not possible. A polyhedron has minimum 4 faces.
   b. Yes, a square pyramid has a square face and 4 triangular faces.
7. a. Edges = 14
   b. Vertices = 5
   c. Faces = 1

CBSE Worksheet-50

CLASS – VIII Mathematics (Visualising Solid Shapes)

Fill in the blanks:

1. There is no reference or perspective in a _____.

2. What are the views in a solid?

3. How many vertices are there in a triangular pyramid?

4. What are three-dimensional shapes?

5. Give the importance of the scale in a map.

6. Give two examples of 2d and 3d shapes each.

7. Define:
   a. Face
   b. Edge
   c. Vertex

Answer Key:

1. map

2. There are 3 views, front view, side view and top view

3. 4

4. These are solid shapes having three values i.e., length, breadth and height (or depth).

5. a. A scale helps in maintaining a proportion between the distances on a map and the actual distances.
   b. A scale can vary from map to map but not within a map.

6. 2d shapes- circle, pentagon
   3d shapes- prism, cylinder

7. Face: A 3D solid object is made up of flat surfaces/polygonal regions called faces.
   Edge: In 3d solid objects, the faces meet at what is called an edge.
   Vertex: The point where all edges meet is called a vertex.

CBSE Worksheet-51

CLASS – VIII Mathematics (Mensuration)

Choose the correct option:

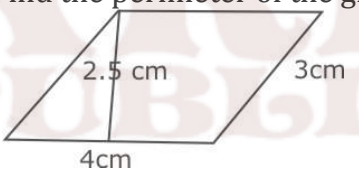
1. Find the volume of a cuboid whose length is 8 cm, breadth 6 cm and height 3.5 cm.
   a. 168 cm^3 b. 168 cm^2
   c. 215 cm^3 d. 150 cm^3

2. Find the area of a triangle whose base is 4 cm and altitude is 6 cm.
   a. 10 cm^2 b. 12 cm^2
   c. 14 cm^2 d. 16 cm^2

3. Find the volume of a cuboid whose length is 8 cm, width is 3 cm and height is 5 cm.
   a. 125 cm^3 b. 130 cm^3
   c. 120 cm^3 d. 135 cm^3

4. Find the cube root of 140 × 2450.
   a. 65 b. 45
   c. 55 d. 70

5. Find the perimeter of the given figure.



   a. 14 cm b. 12 cm
   c. 10 cm d. 8 cm

Fill in the blanks:

6. Area of a trapezium = Half of the sum of the lengths of parallel sides × _____

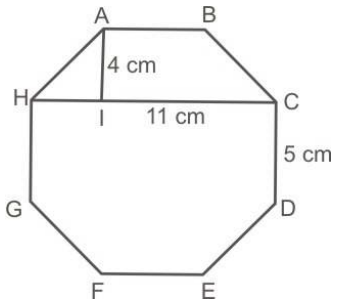
7. _____ of a solid is the sum of the areas of its faces.

Solve the following

8. The diagonal of a quadrilateral shaped field is 24 cm and perpendicular dropped on it from the remaining opposite vertices are 6 m and 12 m. Find the area of the field.

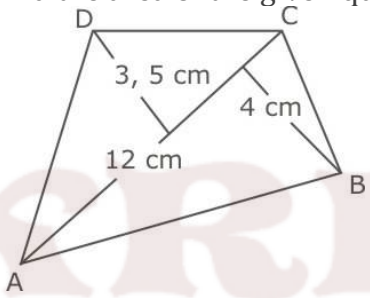
9. A rectangular paper of width 7 cm is rolled along its width and a cylinder of radius 20 cm is formed. Find the volume of the cylinder.

10. The top surface of a box is in the shape of a regular octagon as shown in the figure. Find the area of the octagonal surface.



11. The parallel sides of a trapezium are 25 cm and 13 cm. Its non-parallel sides are equal, each being 10 cm. Find the area of the trapezium.

12. Find the area of the given quadrilateral.



Answer Key:

1. a
2. b
3. c
4. d
5. a
6. perpendicular distance between them
7. Surface area
8. 216 m^2
9. 8800 cm^2
10. 119 cm^2
11. 152 cm^2
12. 45 cm^2

CBSE Worksheet-52
CLASS – VIII Mathematics (Mensuration)

Choose the correct option:

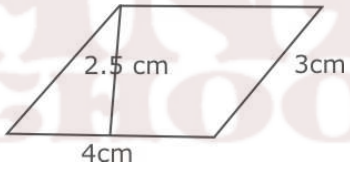
1. Find the altitude of a trapezium, the sum of the lengths of whose bases is 6.5 cm and whose area is 26 cm^2.
   a. 8 cm b. 6 cm
   c. 10 cm d. 12 cm

2. Find the total surface area of a cube whose volume is 343 cm^3.
   a. 200 cm^2 b. 294 cm^2
   c. 350 cm^2 d. 494 cm^2

3. A cylindrical tank has a capacity of 5632 m^3. If the diameter of its base is 16 m, find its depth.
   a. 26 m b. 30 m
   c. 28 m d. 66 m

4. Find the area of a rhombus whose diagonals are of lengths 20 cm and 16 cm.
   a. 150 cm^2 b. 120 cm^2
   c. 140 cm^2 d. 160 cm^2

5. Find the area of the given figure.



   a. 10 cm^2 b. 12 cm^2
   c. 14 cm^2 d. 16 cm^2

Fill in the blanks:

6. Area of a rhombus = _____
7. Surface area of a cuboid = _____

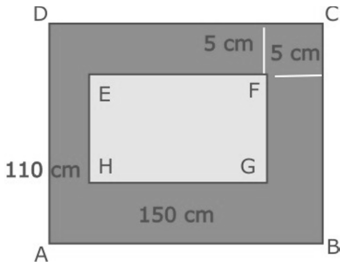
8. A godown is in the form of a cuboid of measures 60 m × 40 m × 20 m. How many cuboidal boxes can be stored in it if the volume of one box 0.8 m^3?

9. The perimeter of a trapezium is 52 cm. Its non-parallel sides are 10 cm each and the distance between two parallel sides is 8 cm. Find the area of the trapezium.

10. The cost of papering the wall of a room, 12 m long, at the rate of Rs. 1.35 per square meter is Rs. 340.20. The cost of matting the floor at Re. 0.85 per square metre is Rs. 91.80. Find the height of the room.

11. The area of a trapezium is 384 cm^2. Its parallel sides are in the ratio 3:5 and the distance between them is 12 cm. Find the length of each parallel side.

12. In the given figure find the area of the path.



Answer Key:

1. a
2. b
3. c
4. d
5. a
6. half the product of its diagonals
7. $2(lb + bh + hl)$
8. 60000
9. 144 cm^2
10. 6 m
11. 24 cm and 40 cm
12. 2500 cm^2

CBSE Worksheet-53
CLASS – VIII Mathematics (Mensuration)

Choose the correct option:

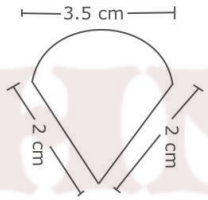
1. Find the height of a cuboid whose volume is 275 cm^3 and base area is 25 cm^2.
   a. 11 cm b. 9 cm
   c. 22 cm d. 6 cm

2. Find the side of a cube whose surface area is 2400 cm^2.
   a. 15 cm b. 20 cm
   c. 10 cm d. 25 cm

3. Find the volume of 64 cubes whose one side is 4 cm.
   a. 3096 cm^3 b. 2096 cm^3
   c. 4096 cm^3 d. 1096 cm^3

4. Find the height of cuboid whose volume is 490 cm^3 and base area is 35 cm^2.
   a. 10 cm b. 12 cm
   c. 16 cm d. 14 cm

5. Find the perimeter of the given figure.



   a. 9.5 cm b. 11 cm
   c. 13 cm d. 12 cm

Fill in the blanks:

6. Surface area of a cube = _____
7. Amount of region occupied by a solid is called its _____.

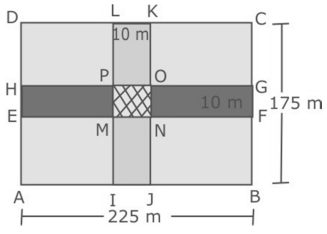
8. The internal measures of a cuboidal room are 10 m × 8 m × 4 m. Find the total cost of whitewashing four walls of a room, if the cost of white washing is Rs 5 per m^2.

9. Square and a rectangle have the same perimeter; if the side of the square is 16m and the length of the rectangle is 18 m, find the breadth of the rectangle.

10. A cylindrical container of radius 28 cm contains sufficient water to submerge a rectangular solid of dimensions 32 cm × 22 cm × 14 cm. Find the rise in the level of water, when the solid is completely submerged.

11. A cylindrical tube, open at both ends is made of metal. The internal diameter of the tube is 10.4 cm and its length is 25 cm. The thickness of the metal is 8 mm everywhere. Calculate the volume of the metal in the cylinder.

12. Find the area of the roads, if two roads are running in cross-section, through the middle of a ground.



Answer Key:

1. a
2. b
3. c
4. d
5. a
6. $6l^2$
7. volume
8. Rs 720
9. 14 m
10. 4 cm
11. 704 cm^2
12. 3900 m^2

CBSE Worksheet-54
CLASS – VIII Mathematics (Mensuration)

Choose the correct option:

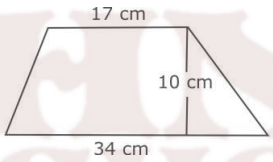
1. Find the area of a rhombus whose diagonals are of measurements 6 cm and 8 cm.
   a. 24 cm^2 b. 20 cm^2
   c. 15 cm^2 d. 12 cm^2

2. How many bricks will be required for a wall which is 8 m long, 6m high and 22.5 cm thick, if each brick measures 25 cm × 11.25 cm × 6 cm?
   a. 6000 b. 6400
   c. 7100 d. 8000

3. Find the volume of a cylinder whose base radius is 14 cm and height is 35 cm.
   a. 21650 cm^3 b. 32560 cm^3
   c. 21560 cm^3 d. 71560 cm^3

4. Find the volume of the cylinder whose height is 7 cm and radius is 20 cm.
   a. 7700 cm^3 b. 8000 cm^3
   c. 6600 cm^3 d. 8800 cm^3

5. Find the area of the following trapezium.



   a. 255 cm^2 b. 200 cm^2
   c. 240 cm^2 d. 300 cm^2

Fill in the blanks:

6. Surface area of a cylinder = _____
7. 1 cm^3 = _____ mL

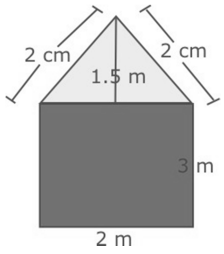
8. Find the area of a rhombus whose side is 5 cm and its altitude is 4 cm. If one of its diagonal is 8 cm long, find the length of the other diagonal.

9. Radha bought a rectangular plot of dimensions 120 m x 80 m and Radhika bought a square field of dimension 95 m. Who bought plot of greater area and by how much?

10. A pool is 20 m long, 15 m broad and 4 m deep. Find the cost of cementing its floor and its walls at the rate of Rs. 12 per square metre.

11. A tin is in a cylindrical shape whose base has a diameter of 14 cm and height 20 cm. A label is placed around the surface of the container. If the label is placed 2 cm from top and bottom, what is the area of the label?

12. Find the area and perimeter of the dollhouse.



Answer Key:

1. a
2. b
3. c
4. d
5. a
6. $2\pi r(r + h)$
7. 1
8. 24 cm^2
9. 575 m^2
10. Rs 3360
11. 704 cm^2
12. 12 m

CBSE Worksheet-55

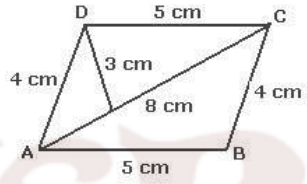
CLASS – VIII Mathematics (Mensuration)

Choose the correct option:

1. Find the volume of the cylinder whose base diameter is 14 cm and height is 10 cm.
   a. 1540 cm^3 b. 1440 cm^3
   c. 1340 cm^3 d. 1240 cm^3

2. The diameter of garden roller is 1.4 m and it is 2 m long. How much area will it cover in 5 revolutions?
   a. 33 m^2 b. 44 m^2
   c. 55 m^2 d. 66 m^2

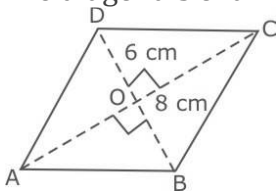
3. Find the area of a parallelogram whose measurements are given in the following figure.



   a. 26 cm^2 b. 28 cm^2
   c. 24 cm^2 d. 30 cm^2

4. Find the side of a cube whose surface area is 2400 cm^2.
   a. 60 cm b. 40 cm
   c. 10 cm d. 20 cm

5. The diagonals of a rhombus are 16 cm and 12 cm, find its area.



   a. 96 cm^2 b. 90 cm^2
   c. 80 cm^2 d. 100 cm^2

Fill in the blanks:

6. Volume of a cuboid = _____
7. 1L = _____ cm^3

Solve the following

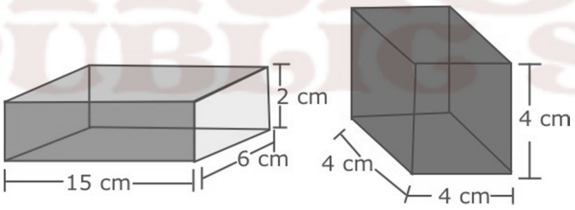
8. In a building there are 4 cylindrical pillars. The radius of each pillar is 21 cm and height is 5 m. Find the curved surface area of four pillars.

9. The parallel sides of a trapezium are in the ratio 2: 3 and the area of the trapezium is 125 cm2. The distance between the parallel lines is 10 cm. Find the length of the parallel sides of the trapezium.

10. A rectangular piece of iron sheet is 44 m long and 20 m broad. It is rolled along its length to form a cylinder. Find the volume of the cylinder so formed.

11. A rectangle piece of metal sheet 11 m x 4 m is folded without overlapping to make a cylinder of height 4 m. Find the volume of the cylinder.

12. In the given figure of a cube and a cuboid which one has a greater surface area and by how much?



Answer Key:

1. a
2. b
3. c
4. d
5. a
6. $l \times b \times h$
7. 1000
8. 26.4 m^2
9. 10 cm and 15 cm
10. 3080 m^3
11. 38.5 m^3
12. 168 m^2

CBSE Worksheet-56

CLASS – VIII Mathematics (Exponents and Powers)

Choose the correct option:

1. $(-2)^5 \div (-2)^8$

   a. $-\frac{1}{8}$ b. $\frac{1}{8}$

   c. $-\frac{1}{5}$ d. $-\frac{1}{2}$

2. Write the expression using exponents: $61 \times 61 \times 61 \times 61 \times 61$

   a. 61^4 b. 61^5

   c. 61^3 d. 61^2

3. Evaluate: 8^2

   a. 512 b. 8

   c. 64 d. 30

4. Find the multiplicative inverse of 2^{-4}.

   a. 2^5 b. 2^3

   c. 2^2 d. 2^4

5. Simplify and write in exponential form: $(-2)^{-3} \times (-2)^{-4}$

   a. $(-2)^{-7}$ b. $(2)^{-7}$

   c. $(-2)^7$ d. $(2)^7$

Fill in the blanks:

6. The repeated factor in an exponential expression is called ____.

7. When we have to add numbers in standard form, we convert them into numbers with the _____ exponents.

8. A group of students were given an assignment to collect different types of leaves. The group collected32 types of leaves. Represent the number of leaves collected in the form of exponential expression with its base being indivisible.

9. Evaluate the exponential expression $(-b)^4 \times (-b)^5$, for b = 4.

10. Find the value of the expression a^2 for a = 10.

11. Expand the following numbers using exponents:

    a. 1025.63

    b. 1256.249

12. Find *m* so that $(-3)^{m+1} \times (-3)^5 = (-3)^7$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. base
7. same
8. 2^5
9. -262144
10. 100
11. a. $1025.63 = 1 \times 10^3 + 0 \times 10^2 + 2 \times 10^1 + 5 \times 10^0 + 6 \times 10^{-1} + 3 \times 10^{-2}$
    b. $1256.249 = 1 \times 10^3 + 2 \times 10^2 + 5 \times 10^1 + 6 \times 10^0 + 2 \times 10^{-1} + 4 \times 10^{-2} + 9 \times 10^{-3}$
12. $m = 1$

CBSE Worksheet-57

CLASS – VIII Mathematics (Exponents and Powers)

Choose the correct option:

1. Simplify: $(-3)^2 \times (5/3)^2$
   a. 25 b. 27
   c. 8 d. 4

2. Write the expression using exponents: $89 \times 89 \times 89 \times 89$
   a. 89^6 b. 89^4
   c. 89^5 d. 89^2

3. Evaluate exponential expression - 2^5.
   a. 16 b. 8
   c. 32 d. 4

4. Find the multiplicative inverse of 10^{-5}.
   a. 10^2 b. 10^3
   c. 10^4 d. 10^5

5. Simplify and write in exponential form: $p^3 \times p^{-10}$
   a. p^{-7} b. p^7
   c. p^{-5} d. p^8

Fill in the blanks:

6. Very small numbers can be expressed in standard form using _____ exponents.

7. a^0 = _____

8. The area of a square is given by the formula $A = c^2$. What will be the total area of 5 such similar squares, if the side of a square is 8 ft?

9. Evaluate the exponential expression $(- n)^4 \times (- n)^2$, for n = 5.

10. Find the value of the expression $3 \times (-m)^2$, for m = 4.

11. Simplify:
    a. $(-4)^5 \times (-4)^{-10}$
    b. $2^5 \div 2^{-6}$

12. Simplify: $\left\{\left(\frac{1}{3}\right)^{-2} - \left(\frac{1}{2}\right)^{-3}\right\} \div \left(\frac{1}{4}\right)^{-2}$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. negative
7. 1
8. 320 ft^2
9. 15625
10. 48
11. a. $\frac{1}{(-4)^5}$
    b. 2^{11}
12. $\frac{1}{16}$

CBSE Worksheet-58
CLASS – VIII Mathematics (Exponents and Powers)

Choose the correct option:

1. Find the value of $\left[\left(\frac{-2}{3}\right)^{-2}\right]^{1}$.

   a. $\frac{9}{4}$ b. $\frac{7}{4}$

   c. $\frac{5}{4}$ d. $\frac{3}{4}$

2. Write the expression using exponents: 27 × 35 × 35 × 35

   a. $27^3 \times 35^1$ b. $27^1 \times 35^3$

   c. $27^1 \times 35^1$ d. $27^3 \times 35^3$

3. Evaluate: - 7^3

   a. 49 b. -49

   c. -343 d. 343

4. Find the multiplicative inverse of 7^{-2}.

   a. 7^5 b. 7^4

   c. 7^3 d. 7^2

5. Simplify and write in exponential form: $3^2 \times 3^{-5} \times 3^6$

   a. 3^3 b. 3^{-3}

   c. 3^4 d. 3^2

Fill in the blanks:

6. $(a^m)^n$ = _____

7. a^{-m} is the multiplicative inverse of _____.

8. A group of students were given an assignment to collect different types of leaves. The group collected 243 types of leaves. Represent the number of leaves collected in the form of exponential expression with its base being indivisible.

9. Find the value of the expression $(2a)^2$, for a = 8.

10. Write the correct base and exponent for the given expression.
    $625 = (?)^2 = 5^{(?)}$

11. Simplify and write the answer in the exponential form:

    a. $\frac{1}{8} \times (3)^{-3}$ b. $(-3)^4 \times \left(\frac{5}{3}\right)^4$

12. Simplify: $\left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-5}$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. a^{mn}
7. a^{m}
8. 3^5
9. 256
10. 25 and 4

11. a. $\frac{1}{6^3}$
    b. 5^4

12. $\frac{64}{25}$

CBSE Worksheet-59

CLASS – VIII Mathematics (Exponents and Powers)

Choose the correct option:

1. Evaluate 6^{-2}.

   a. $\frac{1}{36}$ b. $\frac{1}{25}$

   c. $\frac{1}{16}$ d. $\frac{1}{4}$

2. Write the expression using exponents.

   $3 \times 3 \times 35 \times 35$

   a. $3^2 \times 35^3$ b. $3^2 \times 35^2$

   c. $3^3 \times 35^2$ d. $3^3 \times 35^3$

3. Evaluate the exponential expression 6×10^5.

   a. 600 b. 6000

   c. 60000 d. 60

4. Find the multiplicative inverse of 5^{-3}.

   a. 5^7 b. 5^5

   c. 5^4 d. 5^3

5. Find the value of $(3^{-1} + 4^{-1} + 5^{-1})^0$.

   a. 1 b. 3

   c. 4 d. 5

Fill in the blanks:

6. $a^m \times b^m$ = _____

7. The value of 2^3 is _____.

8. The area of a square is given by the formula $A = c^2$. What will be the total area of 5such similar squares, if the side of a square is 7 in?

9. Evaluate exponential expression $(-m)^2 \times (-m)^2$, for m = 3.

10. Find the value of x, if $32 = 2^x$.

11. Simplify: $\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$

12. Find the value of *m* for which $5^m \div 5^{-3} = 5^5$.

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. $(ab)^m$
7. 8
8. 245 in^2
9. 81
10. 5
11. 5^5
12. 2

CBSE Worksheet-60
CLASS – VIII Mathematics (Exponents and Powers)

Choose the correct option:

1. Evaluate 8^{-3}.
   a. $\frac{1}{512}$ b. $\frac{1}{343}$
   c. $\frac{1}{216}$ d. $\frac{1}{125}$

2. Write the expression using exponents: 25 × 25 × 25
   a. 25^2 b. 25^3
   c. 25^4 d. 25^5

3. Find the multiplicative inverse of 10^{-100}.
   a. 10^{10} b. 10^5
   c. 10^{200} d. 10^{100}

4. Find the value of $(3^0 + 4^{-1}) \times 2^2$.
   a. 2 b. 4
   c. 3 d. 5

5. Evaluate 8^2.
   a. 64 b. 16
   c. 8 d. 12

Fill in the blanks:

6. $a^m \times a^n$ = _____

7. $(-1)^0$ = ___

8. Express the following numbers in usual form:
   a. 7.54×10^{-4}
   b. 3×10^{-5}

9. Evaluate the exponential expression $d^4 \times d^3$, for d = 2.

10. In a stack there are 5 books each of thickness 20mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack.

11. Express the following numbers in usual form:
   a. 3.02×10^{-6}
   b. 4.5×10^4

12. Simplify: $\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}}$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. a^{m+n}
7. 1
8. a. 0.000754
   b. 0.00003
9. 128
10. 1.0008×10^2
11. a. 0.00000302
    b. 45000
12. $\frac{625t^4}{2}$

CBSE Worksheet-61

CLASS – VIII Mathematics (Direct and Inverse Proportions)

Choose the correct option:

1. The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 2 metres of cloth of the same type.
   a. Rs 84 b. Rs 60
   c. Rs 90 d. Rs 100

2. A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. How many parts of base will be used in mixture by mixing 4 part of red pigment?
   a. 28 b. 32
   c. 36 d. 40

3. 6 pipes are required to fill a tank in 1 hour 20 minutes. How long will it take if only 5 pipes of the same type are used?
   a. 56 minutes b. 80 minutes
   c. 96 minutes d. 72 minutes

Fill in the blanks:

4. Two quantities x and y are said to be in _____ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.
5. Two quantities x and y are said to be in _____ if an increase in x causes a proportional decrease in y (and vice-versa) in such a manner that the product of their corresponding values remains constant.

6. An electric pole, 14 metres high, casts a shadow of 10 metres. Find the height of a tree that casts a shadow of 15 metres under similar conditions.

7. A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?

8. Suppose 2 kg of sugar contains 9×106 crystals. How many sugar crystals are there in 1.2 kg of sugar?

9. Which of the following are in inverse proportion?
   a. The number of workers on a job and the time to complete the job.
   b. The time taken for a journey and the distance travelled in a uniform speed.
   c. Area of cultivated land and the crop harvested.
   d. The time taken for a fixed journey and the speed of the vehicle.
   e. The population of a country and the area of land per person.

10. Two persons could fit new windows in a house in 3 days. One of the persons fell ill before the work started. How long would the job take now?

Answer Key:

1. a
2. b
3. c
4. direct proportion
5. inverse proportion
6. 21 metres
7. 700 bottles
8. 5.4×10^6 crystals
9. a, d and e
10. 6 days

CBSE Worksheet-62

CLASS – VIII Mathematics (Direct and Inverse Proportions)

Choose the correct option:

1. The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 4 metres of cloth of the same type.
   a. Rs 168 b. Rs 150
   c. Rs 180 d. Rs 200

2. A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. How many parts of base will be used in mixture by mixing 7 part of red pigment?
   a. 49 b. 56
   c. 63 d. 70

3. There are 100 students in a hostel. Food provision for them is for 20 days. How long will these provisions last, if 25 more students join the group?
   a. 12 days b. 14 days
   c. 16 days d. 18 days

Fill in the blanks:

4. Two quantities x and y are said to be in _____ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.

5. Two quantities x and y are said to be in _____ if an increase in x causes a proportional decrease in y (and vice-versa) in such a manner that the product of their corresponding values remains constant.

6. If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh 2.5 kilograms?

7. A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm as shown in the diagram. What is the *actual* length of the bacteria?

8. Rashmi has a road map with a scale of 1 cm representing 18 km. She drives on a road for 72 km. What would be her distance covered in the map?

9. A contractor estimates that 3 persons could rewire Jasminder's house in 4 days. If, he uses 4 persons instead of three, how long should they take to complete the job?

10. Two persons could fit new windows in a house in 3 days. How many persons would be needed to fit the windows in one day?

Answer Key:

1. a
2. b
3. c
4. direct proportion
5. inverse proportion
6. 750 papers
7. 10^{-4} cm
8. 4 cm
9. 3 days
10. 6 persons

CBSE Worksheet-63

CLASS – VIII Mathematics (Direct and Inverse Proportions)

Choose the correct option:

1. The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 10 metres of cloth of the same type.
   a. Rs 420 b. Rs 400
   c. Rs 450 d. Rs 470

2. A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. How many parts of base will be used in mixture by mixing 12 part of red pigment?
   a. 84 b. 96
   c. 108 d. 120

3. If 15 workers can build a wall in 48 hours, how many workers will be required to do the same work in 30 hours?
   a. 20 b. 22
   c. 24 d. 26

Fill in the blanks:

4. Two quantities x and y are said to be in _____ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.

5. Two quantities x and y are said to be in _____ if an increase in x causes a proportional decrease in y (and vice-versa) in such a manner that the product of their corresponding values remains constant.

6. A train is moving at a uniform speed of 75 km/hour. How far will it travel in 20 minutes?

7. A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm as shown in the diagram. If the photograph is enlarged 20,000 times only, what would be its enlarged length?

8. A 5 m 60 cm high vertical pole casts a shadow 3 m 20 cm long. Find at the same time the length of the shadow cast by another pole 10 m 50 cm high.

9. A batch of bottles were packed in 25 boxes with 12 bottles in each box. If the same batch is packed using 20 bottles in each box, how many boxes would be filled?

10. A school has 8 periods a day each of 45 minutes duration. How long would each period be, if the school has 9 periods a day, assuming the number of school hours to be the same?

Answer Key:

1. a
2. b
3. c
4. direct proportion
5. inverse proportion
6. 25 km
7. 2 cm
8. 6 m
9. 15 boxes
10. 40 minutes

CBSE Worksheet-64

CLASS – VIII Mathematics (Direct and Inverse Proportions)

Choose the correct option:

1. The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 13 metres of cloth of the same type.
   a. Rs 546 b. Rs 560
   c. Rs 600 d. Rs 500

2. A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. How many parts of base will be used in mixture by mixing 20 part of red pigment?
   a. 140 b. 160
   c. 180 d. 200

3. If a box of sweets is divided among 24 children, they will get 5 sweets each. How many would each get, if the number of the children is reduced by 4?
   a. 4 b. 8
   c. 6 d. 10

Fill in the blanks:

4. Two quantities x and y are said to be in _____ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.

5. Two quantities x and y are said to be in _____ if an increase in x causes a proportional decrease in y (and vice-versa) in such a manner that the product of their corresponding values remains constant.

6. A train is moving at a uniform speed of 75 km/hour. Find the time required to cover a distance of 250 km.

7. In a model of a ship, the mast is 9 cm high, while the mast of the actual ship is 12 m high. If the length of the ship is 28 m, how long is the model ship?

8. A 5 m 60 cm high vertical pole casts a shadow 3 m 20 cm long. Find at the same time the height of a pole which casts a shadow 5m long.

9. A factory requires 42 machines to produce a given number of articles in 63 days. How many machines would be required to produce the same number of articles in 54 days?

10. A school has 8 periods a day each of 45 minutes duration. How long would each period be, if the school has 10 periods a day, assuming the number of school hours to be the same?

Answer Key:

1. a
2. b
3. c
4
5. inverse proportion
6. 3 hours 20 minutes
7. 21 m
8. 8 m 75 cm
9. 49 machines
10. 36 minutes

CBSE Worksheet-65

CLASS – VIII Mathematics (Direct and Inverse Proportions)

Choose the correct option:

1. The cost of 5 metres of a particular quality of cloth is Rs 210. Find the cost of 15 metres of cloth of the same type.
   a. Rs 630 b. Rs 600
   c. Rs 660 d. Rs 690

2. Write the expression using exponents: 25 × 25 × 25
   a. 25^2 b. 25^3
   c. 25^4 d. 25^5

3. A farmer has enough food to feed 20 animals in his cattle for 6 days. How long would the food last if there were 10 more animals in his cattle?
   a. 6 b. 2
   c. 4 d. 8

Fill in the blanks:

4. Two quantities x and y are said to be in _____ if they increase (decrease) together in such a manner that the ratio of their corresponding values remains constant.

5. Two quantities *x* and *y* are said to be in _____ if an increase in *x* causes a proportional decrease in *y* (and vice-versa) in such a manner that the product of their corresponding values remains constant.

6. The scale of a map is given as 1:30000000. Two cities are 4 cm apart on the map. Find the actual distance between them.

7. Suppose 2 kg of sugar contains 9 × 106 crystals. How many sugar crystals are there in 5 kg of sugar?

8. A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?

9. A car takes 2 hours to reach a destination by travelling at the speed of 60 km/h. How long will it take when the car travels at the speed of 80 km/h?

10. A factory requires 42 machines to produce a given number of articles in 63 days. How many machines would be required to produce the same number of articles in 49 days?

Answer Key:

1. a
2. b
3. c
4. direct proportion
5. inverse proportion
6. 1200 km
7. 2.25×10^7 crystals
8. 168 km
9. 1.5 hours
10. 54 machines

CBSE Worksheet-66

CLASS – VIII Mathematics (Factorisation)

Choose the correct option:

1. Factorise $12a^2b + 15ab^2$
   a. $3ab\ (4a + 5b)$ b. $3ab$
   c. $(4a + 5b)$ d. $3ab\ (5a + 4b)$

2. Factorise $6xy - 4y + 6 - 9x$.
   a. $(3x - 2)$ b. $(3x - 2)\ (2y - 3)$
   c. $(2y - 3)$ d. $(2x - 3)\ (3y - 2)$

3. Factorise: $x^2 + 8x + 16$
   a. $(x + 2)^2$ b. $(x + 3)^2$
   c. $(x + 4)^2$ d. $(x + 5)^2$

4. Solve: $-20x^4 \div 10x^2$
   a. ½ xy b. xyz
   c. ½ xz d. ½ xyz

5. Find the common factors of $12x$, 36.
   a. 12 b. 36
   c. x d. $12x$

Fill in the blanks:

6. When we factorise an expression, we write it as a _____- of factors.

7. Factorise:
   a. $a^4 - b^4$
   b. $p^4 - 81$

8. Divide the given polynomial by the given monomial:
   a. $(5x^2 - 6x) \div 3x$
   b. $(3y^8 - 4y^6 + 5y^4) \div y^4$

9. Divide as directed:
   a. $5\ (2x + 1)\ (3x + 5) \div (2x + 1)$
   b. $26xy\ (x + 5)\ (y - 4) \div 13x\ (y - 4)$

10. Find and correct the errors in the following mathematical statements.
    a. $4\ (x - 5) = 4x - 5$
    b. $x\ (3x + 2) = 3x^2 + 2$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. product
7. a. $(a - b)(a + b)(a^2 + b^2)$
   b. $(p - 3)(p + 3)(p^2 + 9)$
8. a. $\frac{1}{3}(5x - 6)$
   b. $3y^4 - 4y^2 + 5$
9. a. $5(3x + 5)$
   b. $2y(x + 5)$
10. a. $4(x - 5) = 4x - 20$
    b. $x(3x + 2) = 3x^2 + 2x$

CBSE Worksheet-67

CLASS – VIII Mathematics (Factorisation)

Choose the correct option:

1. Factorise: $10x^2 - 18x^3 + 14x^4$
   a. $2x^2 (7x^2 - 9x + 5)$ b. $2x^2$
   c. $(7x^2 - 9x + 5)$ d. $2x^2 (9x^2 - 5x + 7)$

2. Factorise: $x^2 + xy + 8x + 8y$
   a. $(x + 8)$ b. $(x + 8)(x + y)$
   c. $(x + y)$ d. $(x + 9)(x - y)$

3. Factorise: $4y^2 - 12y + 9$
   a. $(7y - 5)^2$ b. $(5y - 3)^2$
   c. $(2y - 3)^2$ d. $(2y - 5)^2$

4. Solve: $7x^2y^2z^2 \div 14xyz$
   a. 2 b. 4
   c. 3 d. 5

5. Find the common factors of $2y$, $22xy$.
   a. 2y b. 2
   c. y d. 22

Fill in the blanks:

6. The _____ may be numbers, algebraic variables or algebraic expressions.

7. Factorise:
   a. $x^4 - (y + z)^4$
   b. $x^4 - (x - z)^4$

8. Divide the given polynomial by the given monomial:
   a. $8 (x^3y^2z^2 + x^2y^3z^2 + x^2y^2z^3) \div 4x^2y^2z^2$
   b. $(x^3 + 2x^2 + 3x) \div 2x$

9. Divide as directed:
   a. $52pqr (p + q)(q + r)(r + p) \div 104pq (q + r)(r + p)$
   b. $20 (y + 4)(y^2 + 5y + 3) \div 5(y + 4)$

10. Find and correct the errors in the following mathematical statements.
    a. $2x + 3y = 5xy$
    b. $x + 2x + 3x = 5x$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. factors
7. a. $(x - y - z)\ (x + y + z)\ [x^2 + (y + z)^2]$
   b. $z\ (2x - z)\ (2x^2 - 2xz + z^2)$
8. a. $2\ (x + y + z)$
   b. $\frac{1}{2}(x^2 + 2x + 3)$
9. a. $\frac{1}{2}r(p + q)$
   b. $4\ (y^2 + 5y + 3)$
10. a. $2x + 3y = 2x + 3y$
    b. $x + 2x + 3x = 6x$

CBSE Worksheet-680

CLASS – VIII Mathematics (Factorisation)

Choose the correct option:

1. Factorise: $12x + 36$
   a. 12 (x + 3) b. 12
   c. (x + 3) d. 12 (x + 4)

2. Factorise: $15xy - 6x + 5y - 2$
   a. $(3x + 1)$ b. $(3x + 1)(5y - 2)$
   c. $(5y - 2)$ d. $(3x - 1)(7y - 3)$

3. Factorise: $49p^2 - 36$
   a. $(7p + 6)(7p + 6)$ b. $(7p - 6)(7p - 6)$
   c. $(7p - 6)(7p + 6)$ d. $(6p - 7)(7p - 6)$

4. Divide $24xy^2z^3$ by $6yz^2$.
   a. 4xz b. 4xy
   c. 4yz d. 4xyz

5. Find the common factors of 14 pq, $28p^2q^2$.
   a. 14pq b. 14
   c. p d. q

Fill in the blanks:

6. An irreducible factor is a factor which cannot be expressed further as a _____ of factors.

7. Factorise:
   a. $x^4 - (x - z)^4$
   b. $a+ - 2a^2b^2 + b^4$

8. Divide the given polynomial by the given monomial:
   a. $(x^3 + 2x^2 + 3x) \div 2x$
   b. $(p^3q^6 - p^6q^3) \div p^3q^3$

9. Divide as directed:
   a. $x(x + 1)(x + 2)(x + 3) \div x(x + 1)$
   b. $(y^2 + 7y + 10) \div (y + 5)$

10. Find and correct the errors in the following mathematical statements.
    a. $5y + 2y + y - 7y = 0$
    b. $3x + 2x = 5x^2$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. product
7. a. $z\,(2x - z)\,(2x^2 - 2xz + z^2)$
   b. $(a - b)^2\,(a + b)^2$
8. a. $\frac{1}{2}(x^2 + 2x + 3)$
   b. $q^3 - p^3$
9. a. $(x + 2)\,(x + 3)$
   b. $y + 2$
10. a. $5y + 2y + y - 7y = y$
    b. $3x + 2x = 5x$

CBSE Worksheet-69

CLASS – VIII Mathematics (Factorisation)

Choose the correct option:

1. Factorise: $22y - 33z$
   a. 11 (2y – 3z) b. (2y – 3z)
   c. 11 d. 11 (3y – 2z)

2. Factorise: $ax + bx - ay - by$
   a. $(a - b)(x - y)$ b. $(a + b)(x - y)$
   c. $(a + b)(x + y)$ d. $(a - b)(x + y)$

3. Factorise: $a^2 - 2ab + b^2 - c^2$
   a. $(a - b - c)(a - b - c)$ b. $(a - b - c)(a + b + c)$
   c. $(a - b - c)(a - b + c)$ d. $(a + b + c)(a + b + c)$

4. Divide $63a^2b^4c^6$ by $7a^2b^2c^3$.
   a. $9b^2$ b. $9b^2c$
   c. $9c^3$ d. $9b^2c^3$

5. Find the common factors of $2x$, $3x^2$ and 4.
   a. 1 b. 2
   c. 3 d. 4

Fill in the blanks:

6. In factorisation by regrouping, we should remember that any regrouping (i.e., rearrangement) of the terms in the given expression may not lead to _____.

7. Factorise the following expressions:
   a. $p^2 + 6p + 8$
   b. $q^2 - 10q + 21$

8. Divide the following:
   a. $(10x - 25) \div 5$
   b. $(10x - 25) \div (2x - 5)$

9. Divide as directed:
   a. $(m^2 - 14m - 32) \div (m + 2)$
   b. $(5p^2 - 25p + 20) \div (p - 1)$

10. Find and correct the errors in the following mathematical statements.
    a. $(2x)^2 + 4(2x) + 7 = 2x^2 + 8x + 7$
    b. $(2x)^2 + 5x = 4x + 5x = 9x$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. factorisation
7. a. $(p + 2)(p + 4)$
   b. $(q - 3)(q - 7)$
8. a. $2x - 5$
   b. 5
9. a. $m - 16$
   b. $5(p - 4)$
10. a. $(2x)^2 + 4(2x) + 7 = 4x^2 + 8x + 7$
    b. $(2x)^2 + 5x = 4x^2 + 5x$

CBSE Worksheet-70

CLASS – VIII Mathematics (Factorisation)

Choose the correct option:

1. Factorise: $14pq + 35pqr$
   a. 7pq (2 + 5r) b. 7pq
   c. (2 + 5r) d. 7pq (3 – 5r)

2. Factorise: $15pq + 15 + 9q + 25p$
   a. $(5p + 3)$ b. $(5p + 3)(3q + 5)$
   c. $(3q + 5)$ d. $(5p – 3)(3q – 5)$

3. Factorise: $a^2 + 8a + 16$
   a. $(a – 4)^2$ b. $(a + 5)^2$
   c. $(a + 4)^2$ d. $(a – 3)^2$

4. Solve: $–36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. Find the common factors of $6abc$, $24ab^2$ and $12\ a^2b$.
   a. 6ab b. 6
   c. a d. b

Fill in the blanks:

6. In expressions which have factors of the type (x + a) (x + b), remember the numerical term gives _____.

7. Factorise the following expressions:
   a. $q^2 – 10q + 21$
   b. $p_2 + 6p – 16$

8. Divide the following:
   a. $10y\ (6y + 21) \div 5\ (2y + 7)$
   b. $9x^2y^2\ (3z – 24) \div 27xy\ (z – 8)$

9. Divide as directed:
   a. $4yz\ (z^2 + 6z – 16) \div 2y\ (z + 8)$
   b. $5pq\ (p^2 – q^2) \div 2p\ (p + q)$

10. Find and correct the errors in the following mathematical statements.
    Substituting $x = – 3$ in
    a. $x^2 + 5x + 4$ gives $(– 3)^2 + 5\ (– 3) + 4 = 9 + 2 + 4 = 15$
    b. $x^2 – 5x + 4$ gives $(– 3)^2 – 5\ (– 3) + 4 = 9 – 15 + 4 = – 2$

Answer Key:

1. a
2. b
3. c
4. d
5. a
6. ab
7. a. $(q - 3)\ (q - 7)$
   b. $(p + 8)\ (p - 2)$
8. a. $6y$
   b. xy
9. a. $2z\ (z - 2)$
   b. $\frac{5}{2}q(\mathrm{p}-\mathrm{q})$
10. a. $(-3)^2 + 5\ (-3) + 4 = 9 - 15 + 4 = -2$
    b. $(-3)^2 - 5(-3) + 4 = 9 + 15 + 4 = 28$

CBSE Worksheet-71

CLASS – VIII Mathematics (Introduction to Graphs)

Choose the correct option:

1. In which quadrant does the point P (-4, 1) lie?
   a. II b. I
   c. III d. IV

2. On which axis does the point (0, -6) lie?
   a. x-axis b. y-axis
   c. origin d. none of these

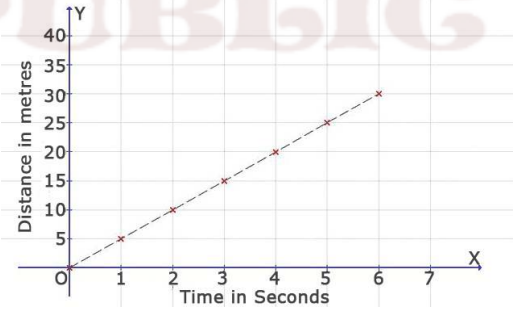
3. Hundred Students from a certain locality use different modes of traveling to school as given below. Draw a bar graph.

Bus	Car	Rickshaw	Bicycle	Walk
32	16	24	20	8

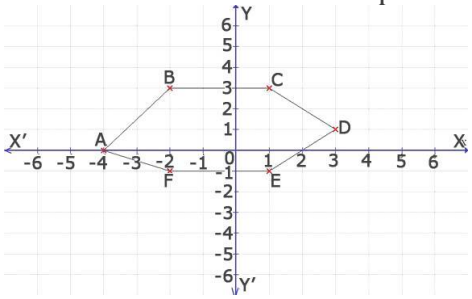
4. If $y = x^2$, then draw a graph.

5. Reena deposited Rs. 12000 in a bank at the rate of 10% per annum. Draw a linear graph showing the relationship between the time and simple interest. Also, find the simple interest for 4 years.

6. Find the distance covered in 3 seconds.



7. Find the coordinates of the points A, B, C, D, E and F from the graph.

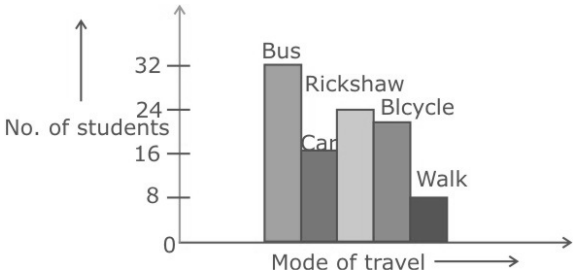


8. Plot the following points on a graph.
   A (4, 3), B (2, 6) C (-2, -3), D (-3, 5)

Answer Key:

1. a

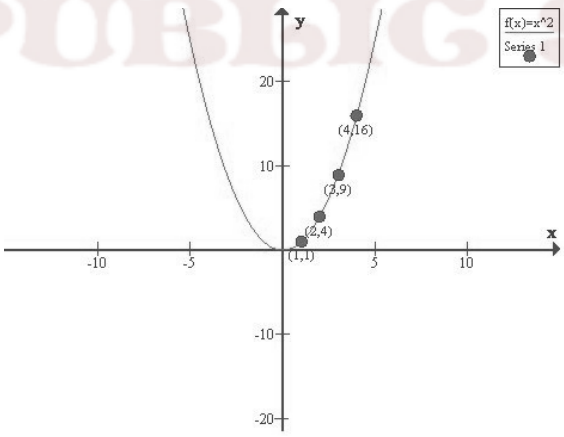
2. b

3. 

4. The table showing data for graph $y = x^2$ is:

x	1	2	3	4	5
y	1	4	9	16	25

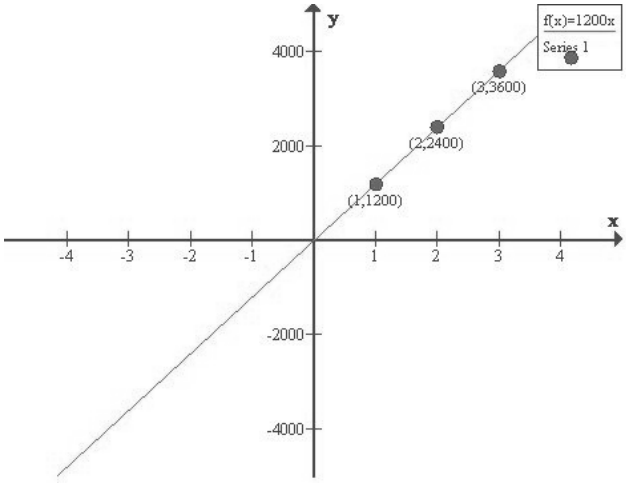
The graph is drawn as given below:



5. Reena deposited money in bank = Rs. 12000
Rate of interest = 10%
Interest after one year = (12000 × 10 × 1)/ 100 = 1200.

Time	1	2	3	4
Simple Interest	1200	2400	3600	4800

Graph between time and Simple interest is given below:

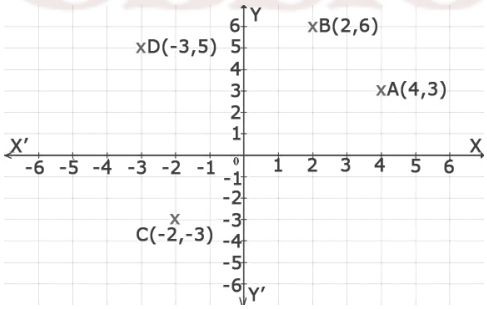


From graph we see that simple interest after 4 years is Rs. 4800.

6. The distance covered in 3 seconds is 15 metres.

7. A (-4, 0), B (-2, 3), C (1, 3), D (3, 1), E (1, -1), F(-2, -1)

8.



CBSE Worksheet-72

CLASS – VIII Mathematics (Introduction to Graphs)

Choose the correct option:

1. In which quadrant does the point Q (-2, -6) lie?
   a. III b. IV
   c. II d. I

2. On which axis does the point (-8, 0) lie?
   a. y-axis b. x-axis
   c. origin d. none of these

3. Mr. Mirza's monthly income is Rs 7,200. He spends Rs 1,800 on rent, Rs. 2,700 on food, Rs 900 on education of his children, Rs 1,200 on others and saves the rest. Draw a pie-chart to represent it.

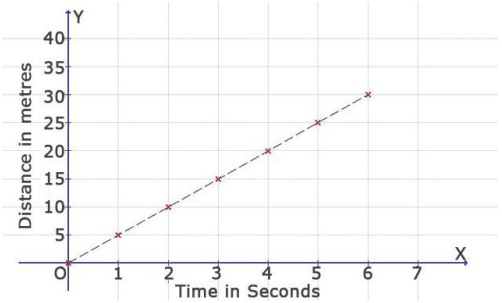
4. Draw the graph for the following table of values.
   Interest on deposits for a year:

Deposit in Rs	1000	2000	3000	4000	5000
Interest in Rs	60	120	180	240	300

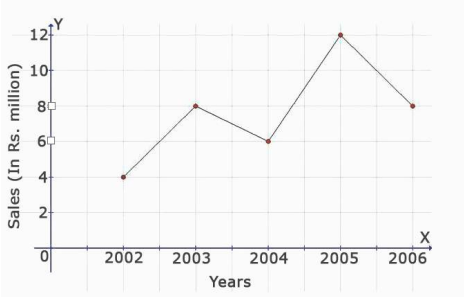
   a. Use the graph to find the interest on a deposit of Rs 4500 for a year.
   b. To get an interest of Rs 420, how much money should be deposited?
   c. Does the graph pass through origin?

5. A train is moving at a constant speed of 75 km/h. Draw a distance – time graph.
   a. How far will it travel in 2 hours 30 minutes?
   b. Find the time required to cover a distance of 300 km.

6. Find the distance covered in 5 seconds.



7. The line graph shows the yearly sales figure for a manufacturing company. From the graph, what were the sales in 2004 and 2006?



8. Draw a graph for the following.

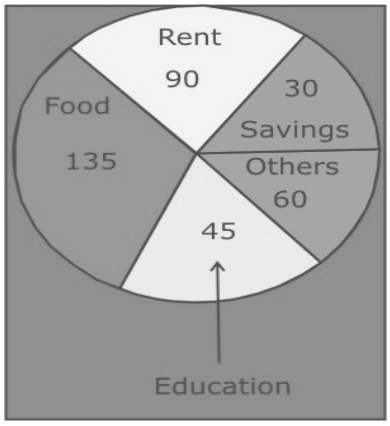
Distance in metres	5	10	15	20	25	30
Time in seconds	1	2	3	4	5	6

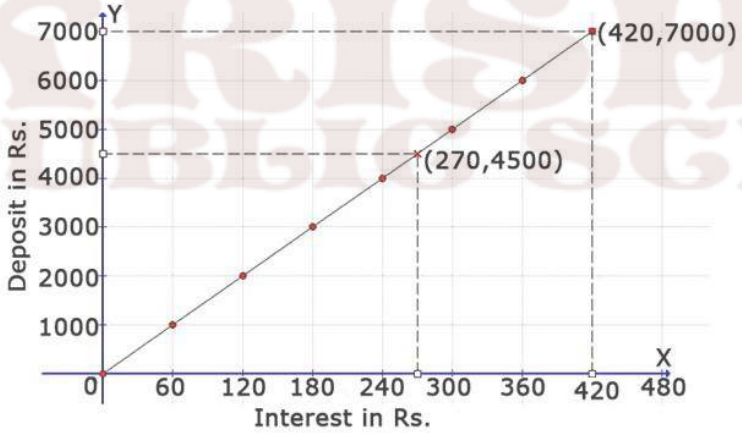
Is it a linear graph?

Answer Key:

1. a

2. b

3. 

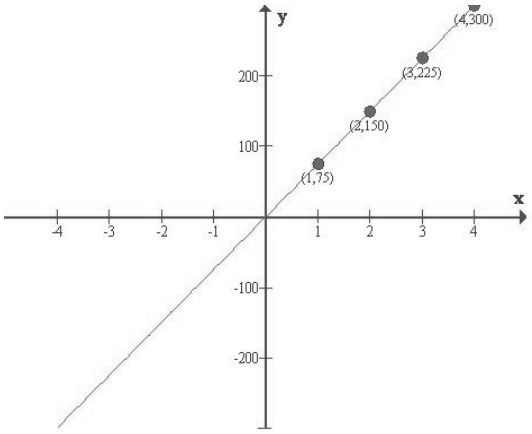
4. 

   a. Deposit of Rs 4500 give an interest of Rs 270.
   b. To get an interest of Rs 420, Rs 7000 should be deposited.
   c. Yes, the graph passes through origin.

5. Speed of train = 75 km/hr
   Table for distance – time graph is given below:

Time (in hours)	1	2	3	4
Distance travelled(in Km)	75	150	225	300

   The distance – time graph is given below:



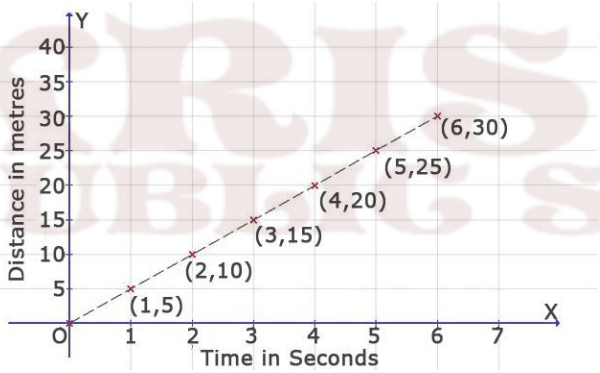
a. From graph, Train will travel in 2 hours and 30 minutes = 187.5 km

b. Time required to cover a distance of 300 km = 4 hrs.

6. The distance covered in 5 second is 25 metres.

7. Sales in 2004 is 6 million and in 2006 is 8 million.

8.



Yes, it is a linear graph.

CBSE Worksheet-73
CLASS – VIII Mathematics (Introduction to Graphs)

Choose the correct option:

1. On which axis does the point (0, 5) lie?
   a. y-axis b. x-axis
   c. origin d. None of these

2. In which quadrant does the point P (5, -1) lie?
   a. I b. IV
   c. III d. II

3. In a class of 40 students, the marks obtained (out of 50) are as given below:

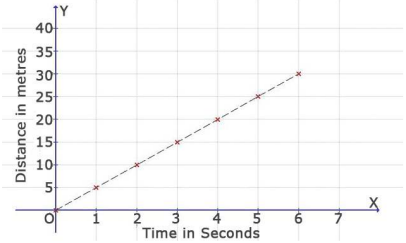
Marks	0-10	10-20	20-30	30-40	40-50
No. of students (frequency)	5	10	12	8	5

   Draw a histogram to represent the given data.

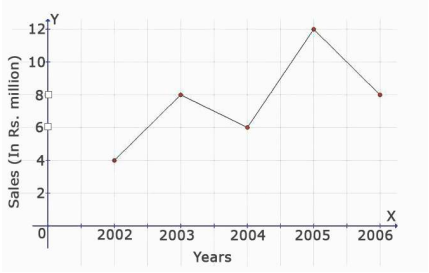
4. Draw the graph for a function A = x^2 (Area of a square = side^2). Make a table when the side of a square is 2 cm, 3 cm, 4 cm, 5 cm, 6 cm and 7 cm. Is it a linear graph?

5. A bank gives 10% simple interest on savings account. Draw a linear graph to show the relationship between the sum deposited and simple interest earned. Also, answer the following questions:
   a. Find the interest earned on an investment of Rs. 300.
   b. What investment should be made to earn Rs.70 as interest?

6. Find the time taken by a body to cover 30 metres.



7. The line graph given shows the yearly sales figure for a manufacturing company. From the graph, what were the sales in 2003 and 2005?

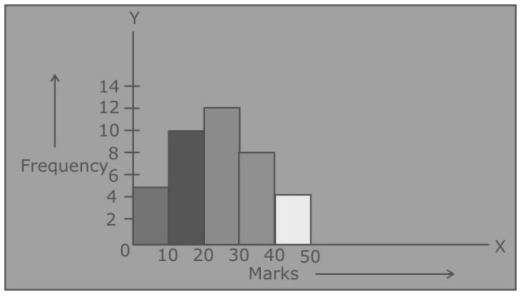


8. Plot the following points. Verify if they lie on a line.
   (1, 3), (2, 3), (3, 3), (4, 3)

Answer Key:

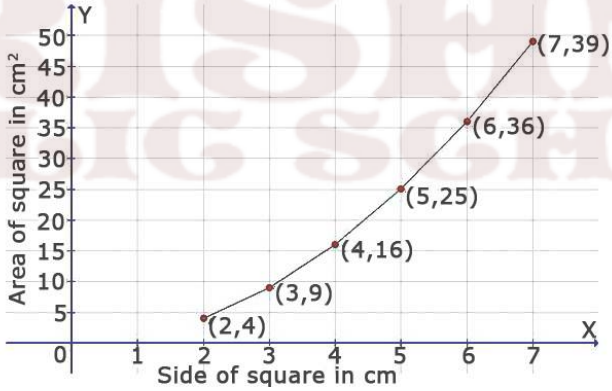
1. a

2. b

3. 

4.

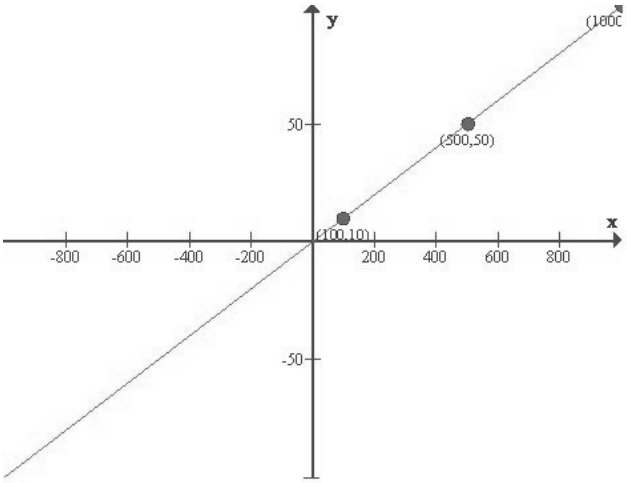
Side of a square in cm	2	3	4	5	6	7
Area in cm^2	4	9	16	25	36	49



It is not a linear graph.

5. Rate of interest = 10%
Let invested money = ₹ x
Then, interest (y) = (10/100)x i.e., y = x/10

Investment	100	500	1000	2000
Interest	10	50	100	200



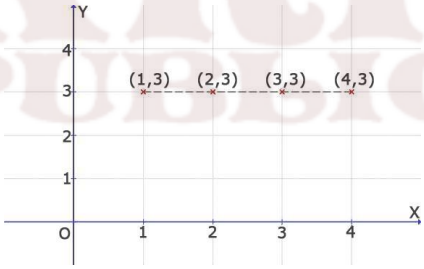
a. From the graph we see that interest earned on saving of Rs.300 is ₹ 30.

b. To made interest of ₹ 70, he should invest ₹ 700.

6. In 6 seconds it covers 30 metres.

7. Sales in 2003 is 8 million and in 2005 is 12 million.

8.



Yes, they all lie on a line.

CBSE Worksheet-74
CLASS – VIII Mathematics (Introduction to Graphs)

Choose the correct option:

1. On which axis does the point (5, 0) lie?
   a. x-axis b. y-axis
   c. origin d. none of these

2. In which quadrant does the point P (-8, 1) lie?
   a. III b. IV c. II d. I

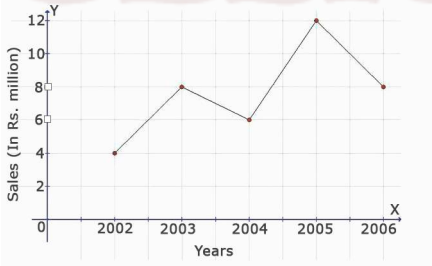
3. Draw the histogram to represent the following data:

Class-Interval	50-60	60-70	70-80	80-90
Frequency	20	30	25	10

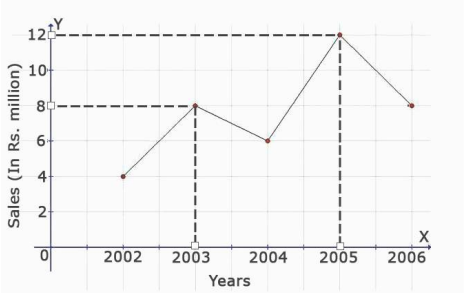
4. State true or false
   a. A point whose x-coordinate is zero and y-coordinate is non-zero will lie on the y-axis.
   b. The coordinates of the origin are (0, 0).
   c. A point whose y-coordinate is zero and x-coordinate is 4 will lie on y axis.

5. Mayank deposited Rs. 1400 in a bank at the rate of 10% per annum. Draw a linear graph which shows the relationship between time and the interest earned by Mayank.

6. In which year was there the greatest difference between the sales as compared to its previous year?



7. From the given graph, compute the difference between the sales 2003 and 2005.

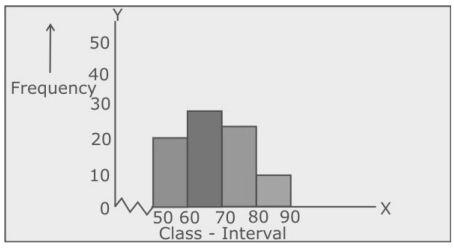


8. Make a table of values for the function P = 4a, where P is the perimeter and a is side of the square.

Answer Key:

1. a
2. b

3.

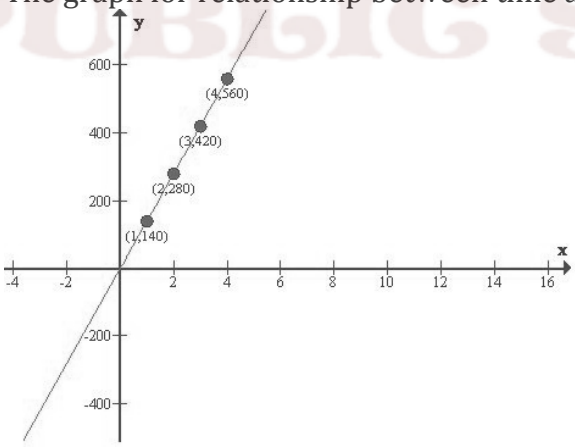


4. a. True
   b. True
   c. False, the point will lie on the x-axis.

5. Mayank deposited money in bank = Rs. 1400
   Rate of interest of bank = 10%
   Mayank got interest for 1 year = (10/100) × 1400 = Rs. 140
   Table for relationship between time and the interest earned by Mayank.

Time(in years)	1	2	3
Interest(in Rs.)	140	280	420

   The graph for relationship between time and the interest is given below:



6. In year 2004, sales is 6 million and in year 2005, sales is 12 million
   Difference is 6 million. It's the greatest difference between the sales as compared to its previous year.

7. Sales in 2005 = 12 million, Sales in 2003 =8 million
   The difference between the sales in 2005 and 2003 = 12 – 8 = 4 million.

8.

a	0	1	2	3	4
4a	0	4	8	12	16

CBSE Worksheet-75

CLASS – VIII Mathematics (Introduction to Graphs)

Choose the correct option:

1. In which quadrant does the point Q (2, 6) lie?
   a. I b. II
   c. III d. IV

2. On which axis does the point (-1, 0) lie?
   a. y-axis b. x-axis
   c. origin d. none of these

3. The percentage of marks obtained, in different subjects by Ashok Sharma (in an examination) are given below. Draw a bar graph to represent it.

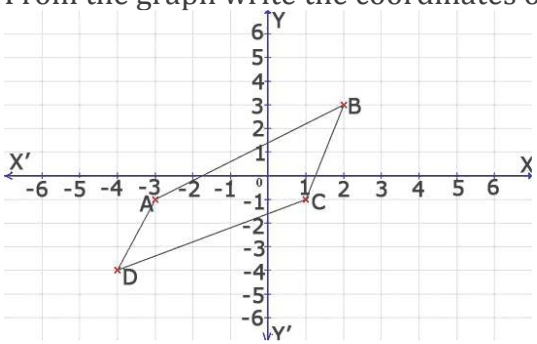
English	Hindi	Maths	Science	Social Science
85	60	35	50	70

4. The approximate speeds of some objects are given below. Draw a bar graph to represent them.

Name of objects	Bicycle	Scooter	Car	Bus	Train
Speed (in km/hr)	10	40	60	50	80

5. Parul is driving a car constantly at a speed of 30 km/h. Draw a distance-time graph in this case. Also, find the time taken by Parul to cover a distance of 120 km.

6. From the graph write the coordinates of the A, B, C and D.



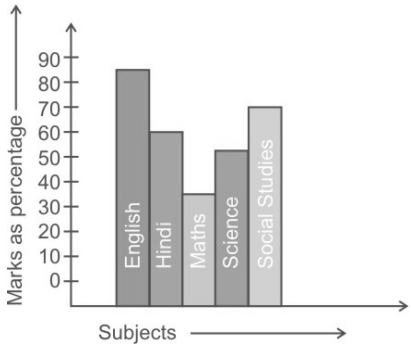
7. Make a table of values for the function y = 3x. From the table find the values of y when x = 4 and x = 5.

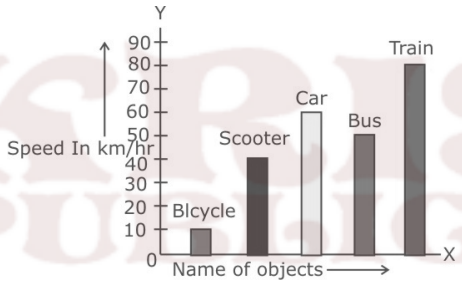
8. Draw the line passing through (2, 3) and (3, 2). Find the coordinates of the points at which this line meets the x-axis and y-axis.

Answer Key:

1. a

2. b

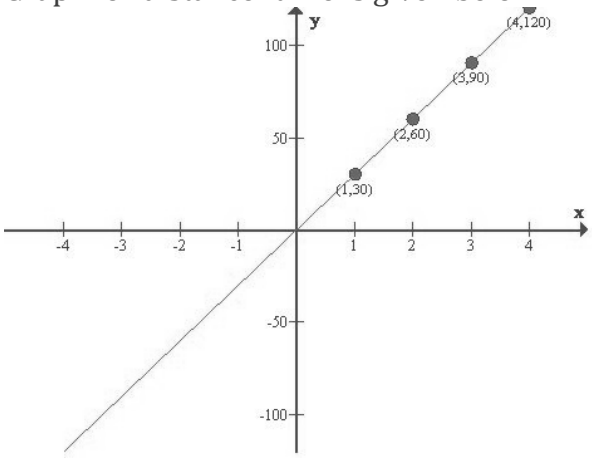
3. 

4. 

5. Speed of car = 30 km/h
Distance covered in 1 hour = 1×30 = 30 km
Table for distance-time is given below:

Time	1	2	3	4
Distance	30	60	90	120

Graph for distance- time is given below:



From graph, Parul takes 4 hours to cover 120 km distance.

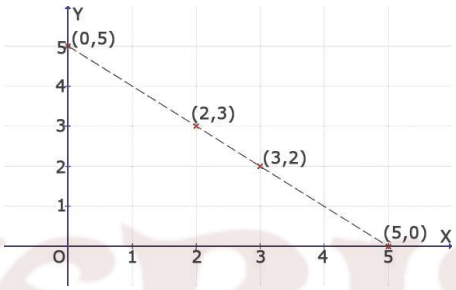
6. Coordinate of A = (3, - 1)
Coordinate of B = (2, 3)
Coordinate of C = (1, - 1)
Coordinate of D = (- 4, -4)

7.

x	0	1	2	3	4	5
y = 3x	0	3	6	9	12	15

When x = 4,y = 12
When x = 5,y = 15

8.



(2, 3) and (3, 2) meets the x-axis at (5, 0) and y-axis at (0, 5) .

CBSE Worksheet-76

CLASS – VIII Mathematics (Playing with Numbers)

Choose the correct option:

1. Write in generalised form: 25
   a. $10 \times 2 + 5$ b. $10 \times 5 + 2$
   c. $10 \times 5 + 3$ d. $10 \times 3 + 5$

2. Write in the usual form: $10 \times 5 + 6$
   a. 65 b. 56
   c. 25 d. 54

3. If the division N ÷ 5 leaves a remainder of 3, what might be the ones digit of N?
   a. 1 b. Either 7 or 2
   c. Either 3 or 8 d. 5

4. Solve: $-36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. If the division N ÷ 2 leaves a remainder of 1, what might be the one's digit of N?

6. Find the values of the letters in following:

$$\begin{array}{r} 2\,A\,B \\ +\,A\,B\,1 \\ \hline B\,1\,8 \end{array}$$

7. Check what the result would have been if chose the numbers shown below.
   a. 27
   b. 39

8. Check the divisibility of 21436587 by 9.

Answer Key:

1. a
2. b
3. c
4. d
5. The one's digit must be 1, 3, 5, 7 or 9.
6. A = 4, B = 7
7. a. $6y$
   b. xy
8. Yes

CBSE Worksheet-77

CLASS – VIII Mathematics (Playing with Numbers)

Choose the correct option:

1. Write in generalised form: 73
   a. $10 \times 7 + 3$ b. $10 \times 3 + 7$
   c. $10 \times 3 + 5$ d. $10 \times 7 + 2$

2. Write in the usual form: $100 \times 7 + 10 \times 1 + 8$
   a. 781 b. 718
   c. 871 d. 178

3. If the division N ÷ 5 leaves a remainder of 1, what might be the one's digit of N?
   a. 1 b. Either 7 or 2
   c. 6 d. 5

4. Solve: $-36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. If the division N ÷ 2 leaves no remainder (i.e., zero remainder), what might be the one's digit of N?

6. Find the values of the letters in following:

$$\begin{array}{r} 1\,2\,A \\ +\,6\,A\,B \\ \hline A\,0\,9 \end{array}$$

7. Check the divisibility of 152875 by 9.

8. Check what the result would have been if you chose the numbers shown below.
   a. 64
   b. 17

Answer Key:

1. a
2. b
3. c
4. d
5. The one's digit must be 0, 2, 4, 6 or 8.
6. A = 8, B = 1
7. No

CBSE Worksheet-78

CLASS – VIII Mathematics (Playing with Numbers)

Choose the correct option:

1. Write in generalised form: 85
   a. $10 \times 8 + 5$ b. $10 \times 5 + 8$
   c. $10 \times 5 + 3$ d. $10 \times 3 + 5$

2. Write in the usual form: $100 \times a + 10 \times c + b$
   a. bca b. acb
   c. abc d. bac

3. If the division N ÷ 5 leaves a remainder of 4, what might be the one's digit of N?
   a. 7 b. Either 2 or 7
   c. Either 4 or 9 d. 5

4. Solve: $-36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. Suppose that the division N ÷ 5 leaves a remainder of 4, and the division N ÷ 2 leaves a remainder of 1. What must be the one's digit of N?

6. Find the values of the letters in following:

$$\begin{array}{r} AB \\ \times\ 3 \\ \hline CAB \end{array}$$

7. Find Q in the addition.

$$\begin{array}{r} 31Q \\ +\ 1Q3 \\ \hline 501 \end{array}$$

8. Check the divisibility of 2146587 by 3.

Answer Key:

1. a
2. b
3. c
4. d
5. 9
6. A = 5, B = 0, C = 1
7. Q = 8
8. Yes

CBSE Worksheet-79

CLASS – VIII Mathematics (Playing with Numbers)

Choose the correct option:

1. Write in generalised form: 128
   a. $100 \times 1 + 10 \times 2 + 8$ b. $100 \times 1 + 10 \times 2 + 5$
   c. $100 \times 1 + 10 \times 8 + 2$ d. $100 \times 2 + 10 \times 1 + 8$

2. Write in the usual form: $100 \times 7 + 10 \times 5 + 6$
   a. 765 b. 756
   c. 658 d. 786

3. If the division N ÷ 5 leaves a remainder of 0, what might be the one's digit of N?
   a. 2 b. 4
   c. Either 5 or 0 d. 7

4. Solve: $-36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. If 21*y*5 is a multiple of 9, where *y* is a digit, what is the value of *y?*

6. Find the values of the letters in following:

$$\begin{array}{r} A\ B \\ \times\ 5 \\ \hline C\ A\ B \end{array}$$

7. Find A and B in the addition.

$$\begin{array}{r} A \\ +\ A \\ +\ A \\ \hline B\ A \end{array}$$

8. Check the divisibility of 15287 by 3.

Answer Key:

1. a
2. b
3. c
4. d
5. 1
6. A = 5, B = 0, C = 2
7. A = 5 and B = 1
8. No

CBSE Worksheet-80

CLASS – VIII Mathematics (Playing with Numbers)

Choose the correct option:

1. Write in generalised form: 425
   a. $100 \times 4 + 10 \times 2 + 5$ b. $100 \times 4 + 10 \times 5 + 2$
   c. $100 \times 4 + 10 \times 8 + 5$ d. $100 \times 5 + 10 \times 2 + 5$

2. Write in the usual form: $10 \times 6 + 7$
   a. 76 b. 67
   c. 57 d. 87

3. Factorise: $a^2 + 8a + 16$
   a. $(a - 4)^2$ b. $(a + 5)^2$
   c. $(a + 4)^2$ d. $(a - 3)^2$

4. Solve: $-36y^3 \div 9y^2$
   a. -4 b. 4y
   c. -y d. -4y

5. If 31z5 is a multiple of 9, where z is a digit, what is the value of z?

6. Find the values of the letters in following:

$$\begin{array}{r} A\ B \\ \times\ 6 \\ \hline B\ B\ B \end{array}$$

7. Find the digits A and B.

$$\begin{array}{r} B\ A \\ \times\ B\ 3 \\ \hline 5\ 7\ A \end{array}$$

8. Check the divisibility of 616 by 3.

Answer Key:

1. a
2. b
3. c
4. d
5. 0 or 9
6. A = 7, B = 4
7. A = 0 or A = 5
8. No