

Chapter—1

Integers

1. Fill in the blanks:

(a) $30 \div \underline{\hspace{2cm}} = 3$

(b) $-89 \div \underline{\hspace{2cm}} = 89$

(c) $\underline{\hspace{2cm}} \div 1 = -205$

(d) $\underline{\hspace{2cm}} \times (-12) = 120$

(e) $24 + 12 \div 4 - 5 \times 3 = \underline{\hspace{2cm}}$

2. Find the value of P, if $p \times (-9) = 135$

3. The additive inverse of zero (0) is .

4. Match the properties of Integers :

(a) Distributive law over addition

(i) $a + 0 = a = 0 + a$

(b) Associative law for multiplication

(ii) $a + b = b + a$

(c) Additive Identity

(iii) $(a \times b) \times c = a \times (b \times c)$

(d) Commutative law over addition

(iv) $a \times 1 = 1 \times a = a$

(e) Multiplicative Identity

(v) $a \times (b + c) = a \times b + a \times c$

5. Use the sign of $>$, $<$ or $=$ in the box to make the statement true.

(a) $25 - 40 + 10$ $25 - 40 - 10$

(b) $(-9) + (-6)$ $(-9) - (-6)$

(c) $35 + (-70) - (-35)$ $(-24) - (15) + 39$

6. Evaluate :

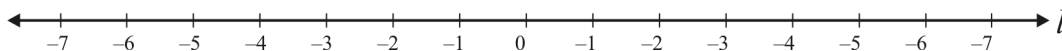
(a) $(-1) \times (-2) \times (-3) \times (-4) \times (-5)$

(b) $795 \times (-25) + (-795) \times 75$

(c) $(-59) \times (-19) + 59$

7. An elevator descends in to a mine shaft at the rate of 7m/min. If he descent starts from 5m above the ground level, how long will it take to reach -205 m?

8. With the help of number line find how much greater is the number 3 then -3 .



9. The sum of two integers is -1500 . One of the number is 599. Find the other number.

10. Write the answer in True/False :
- (a) When 0 is divided by an integer, the quotient is zero.
- (b) The product of an integer and 1 is an integer.
- (c) When an integer is divided by itself, the quotient is 1.
11. The product of two integers is -160 . If one of them is 20, find the other.
12. What integers should be multiplied by (-12) to become -300 .
13. Pallavi got the scholarship of ₹ 1000 from her school. If she gives ₹550 for the help of flood relief, find the balance amount with her.
14. A building has 21m height. A monkey can climb 3m in one jump. In how many jumps, would the monkey reach at the top of the building?
15. Fill in the blanks using different operations :

Operations	18	36	54	72
+ 25				
- 17				
× 6				
÷ 18				

Chapter—2

Fractions and Decimals

1. (a) $\frac{1}{2} + \frac{2}{3} = \boxed{}$ (b) $\frac{5}{7} - \frac{2}{3} = \boxed{}$
2. (a) $\frac{2}{3} \times \frac{5}{7} = \boxed{}$ (b) $\frac{2}{3} \times \frac{9}{20} = \boxed{}$
3. The two-third of 42 is _____.
4. Find the missing number :
(a) $3\frac{3}{4} + \boxed{} = 4$ (b) $12 - 2\frac{3}{4} = \frac{\boxed{}}{4}$
5. Divide $\frac{15}{24}$ by $\frac{3}{4}$.
6. Karim had 20 toffees. He took these toffees with him to a picnic with four of his friends. Karim along with friends, shared these toffees equally. How many toffees did each one get?
7. How long is 88.6km than 48 km?
8. If cost of 20 pens is ₹ 356.80, then find the cost of a pen.
9. Kartikeya bought 5 kg 500g apples and 3 kg 250g of oranges. Shivani bought 4kg 200g mangoes and 4kg 500g guavas. Who bought more fruits and how much?
10. Express in kg:
(a) 4730g (b) 8kg 4g
11. Soumya ate $\frac{2}{5}$ part of an apple and her younger brother Somu ate the remaining part. What part of the apple did Sonu eat? Who had the longer share and by how much?
12. Convert :
(a) 0.25 into fraction (b) $\frac{19}{20}$ to decimal form

13. Simplify :

(a) $7 - 3\frac{1}{2} - 2\frac{1}{2}$

(b) $3\frac{1}{8} \times 2\frac{2}{5} \times 1\frac{3}{5}$

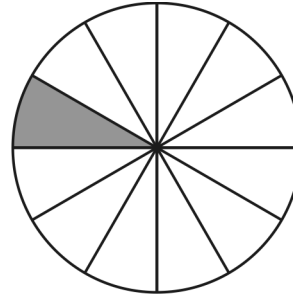
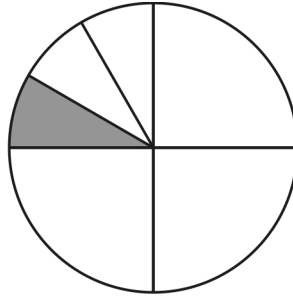
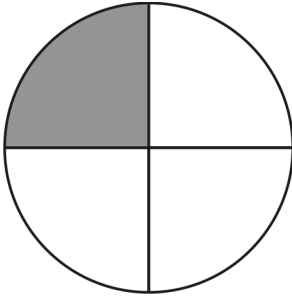
(c) $11.2 \times 0.15 \div \frac{4}{5}$

(d) $3\frac{3}{7} \div \frac{8}{21} \times \frac{1}{27}$

(e) $0.089 \times 0.76 \div 0.19$

14. Each side of a square field is 5.5m. Find the perimeter of the square field.

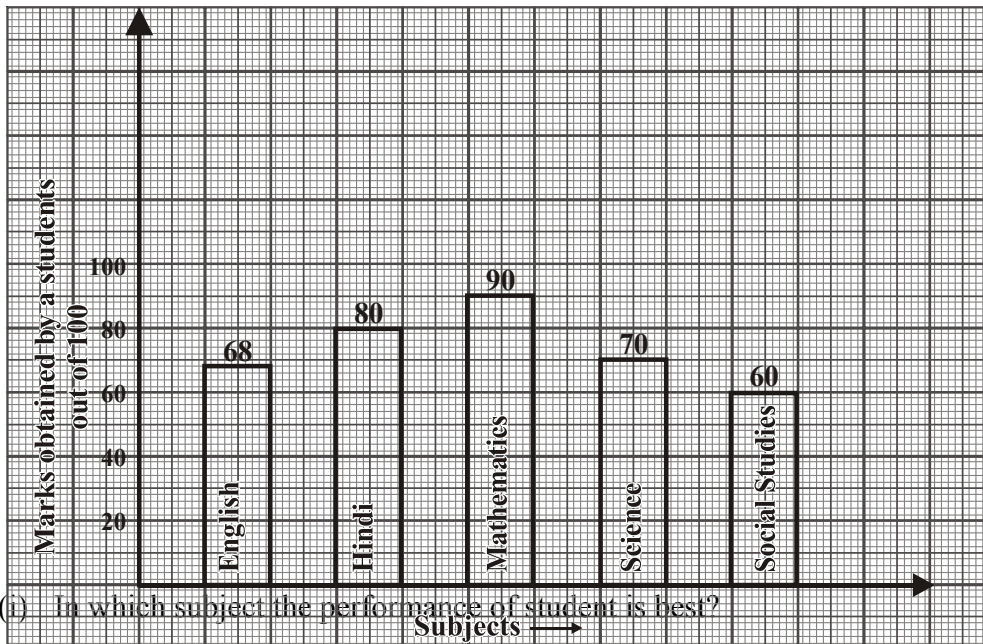
15. Write the pictorial representation of shaded portion in the form of fraction.



Chapter—3

Data Handling

- Fill in the blanks :
 - Mean of first 5 natural numbers is _____
 - Range for the data 12, 15, 7, 9, 16, 18 is _____
 - Median of the data 38, 40, 42, 48, 65, 72, 75, is _____
 - Mode of the data 2, 3, 5, 6, 7, 3, 2, 9 is _____
- A die thrown once find the probability for the following :
 - Getting a number greater than 5.
 - Getting a prime number.
 - Getting an even natural number.
 - Getting a number less than 4.
- If mean of 9, 5, 7, x , 6 is 6, find the value of x .
- What is the range of the these integers?
20, 6, 18, -15, -12, 0
- State whether the given statements are true or false
 - Mean of the data is always from the given data.
 - The range of the data 2, 9, 6, 5, 8 would change if 3 was added to each value in the data.
 - When a coin is tossed, there are two possible outcomes.
 - Probability of selecting you as a monitor within class is greater than one.
- Study the bar graph given below and answer the questions that follow :



- In which subject the performance of student is best?

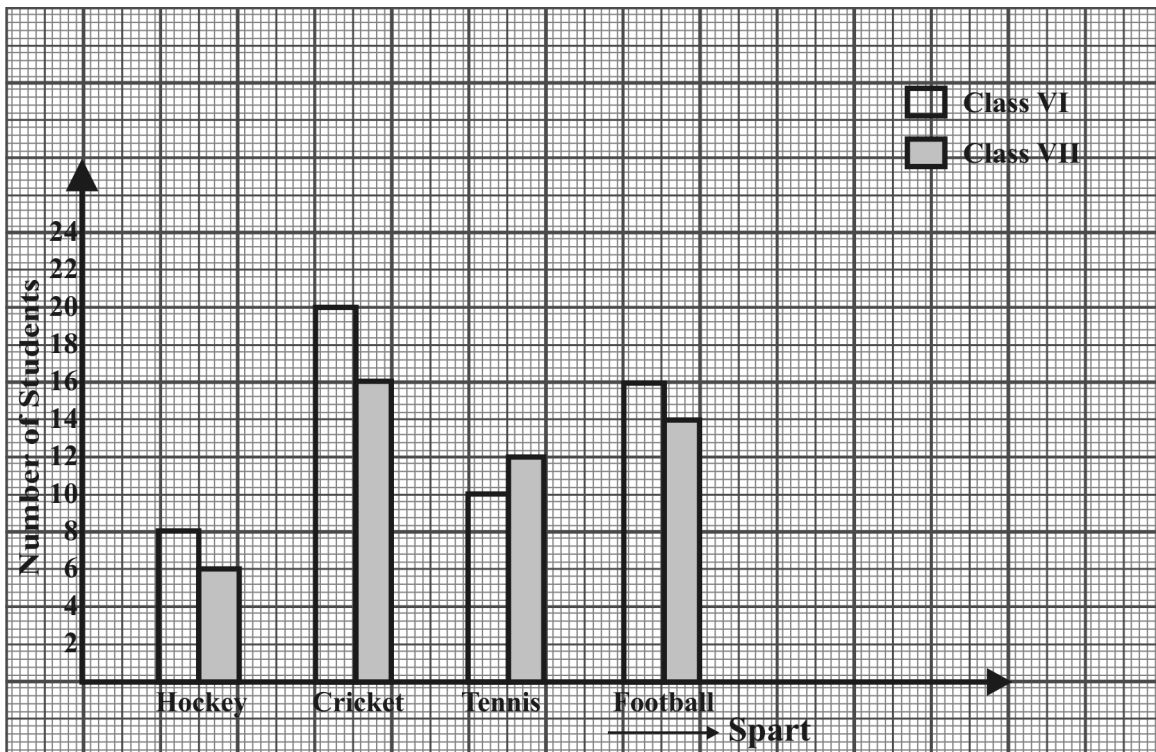
- (ii) Calculate the average marks of the student.
- (iii) If 75 and above marks denote a distinction, then name the subjects in which the student got distinction.
- (iv) Calculate the percentage of marks the student got out of 500.

7. Observe the following data and answer the questions that follow :

Days of the Week	Mon	Tue	Wed	Thu	Fri	Sat
No. of plants planted by students in a school	25	45	35	38	40	30

- (i) Draw a bar graph to represent the above given information.
- (ii) On which day of the week maximum number of plants planted by students.
- (iii) Find the ratio of the minimum and maximum number of plants planted.
- (iv) Find the total no. of plants planted.

8. Study the double bar graphs given below and answer the following questions :



- (i) Which sport is liked the most by class VII students?
- (ii) How many students are there in class VII if each student plays only one sport?
- (iii) How many students of class VI like hockey and football in all?
- (iv) For which sport the number of students of class VII is more than that of class VI.

Chapter—4

Simple Equations

1. Solve the following equations:

(a) $\frac{3x}{8} = 27$ (b) $5x + 3 = \frac{4}{3}(1 + x)$ (c) $0.15(5x - 2) = 0.4(x + 1)$

2. Write the following equation in the form of statement:

(a) $\frac{z}{3} + 3 = 30$ (b) $\frac{x}{4} - 4 = 4$

3. Write equations for the following statement :

- (a) The length of a rectangle is 5 more than its breadth and its perimeter is 250m.
(b) One third of a number is 8 less than the three times of the number.

4. If $x = y + 2$, then find the value of y in equation

$$y - \frac{(x - 2)}{2} = \frac{2}{3}$$

5. Solve the following equations :

(a) $4 + 5(m - 1) = 34$ (b) $0 = 16 + 4(n - 6)$

6. People of Anandgram planted trees in the village garden. Some of the trees were fruit trees. The number of non fruit trees were two more than three times the number of fruit trees.

- (a) What was the number of fruit trees planted if the number of non-fruit trees planted was 93.
(b) Write two benefits of plantation of tree.

7. If the difference of two complementary angles is 10° then find measure of each angle.

8. Find the measure of such angle whose supplementary angle is 35° more than twice of its complementary angle.

9. Set up equation and solve it find the unknown number.

“If I take three-fourth of a number and add 3 to it, I get 21.”

10. The ratio of Nisha and Nishant ages in 4 : 5. After 10 years the father's age will become 5:6. Find their present ages.

11. A father is 35 years more than his son's age. After 5 years the father's age will be twice of his son's age. Find the present age of both.

12. Solve the following riddle :

I am a number

Take me seven times over

Tell my identity!

Take me seven times over

And add a fifty.

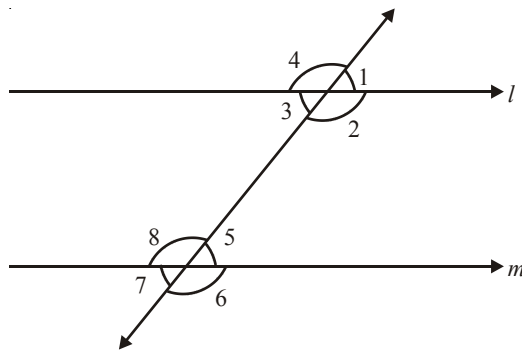
To reach a triple century

Your shall need forty.

Chapter—5

Lines and Angles

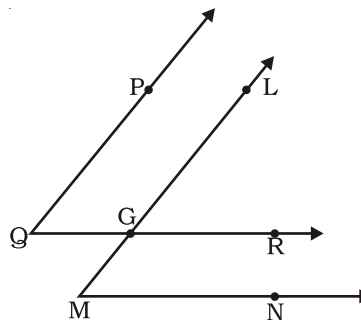
- Complementary angle of 65° is
 - Supplementary angle of 45° is
 - If line $AB \parallel CD$ and LM is transversal, sum of two interior angles on the same side of transversal is equal to
 - An angle is formed by the intersection of
- In the figure, identify the pairs of corresponding angles.



- An angle is greater than 45° . Its complement will be :
 - Less than 45°
 - Equal to 45°
 - Greater than 45°
 - None of these
- State true or false :
 - If measure of an angle is 90° then its supplement angle will be greater than 90° .
 - Two obtuse angles form a linear pair.
 - Two acute angles form a linear pair.
 - If two adjacent angles are complementary they form a right angle.
- In the figure, the arms of two angles are parallel.

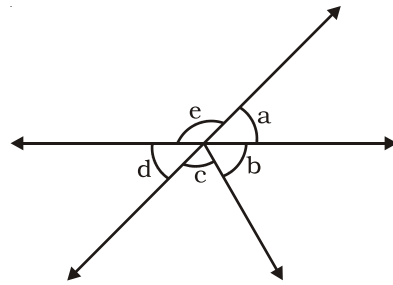
If $\angle PQR = 70^\circ$, then find

- $\angle LGR$
- $\angle LMN$

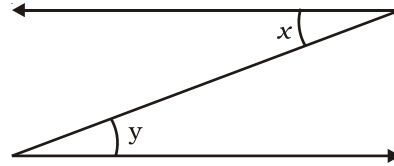


6. Indicate two pairs of angles which are :

- (i) Vertically opposite angles
- (ii) Linear pairs



7. In the following figure, is $\angle x$ adjacent to $\angle y$?
Give reason.

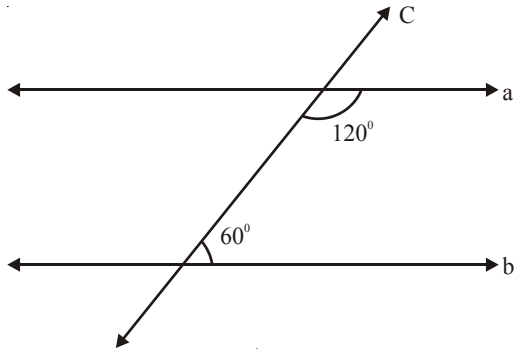


8. Find the angle :

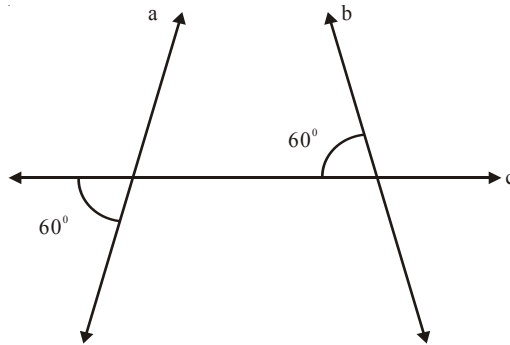
- (i) Which is equal to its complement.
- (ii) Which is equal to its supplement.

9. In the given figure, decide a is parallel to b .

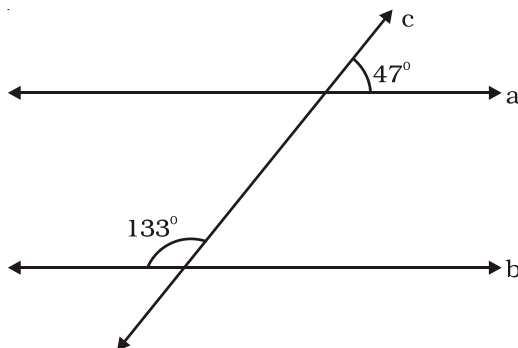
(i)



(ii)

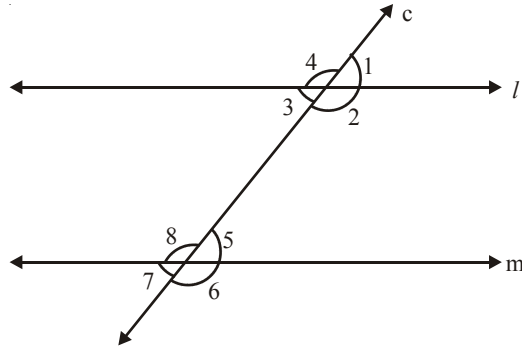


(iii)

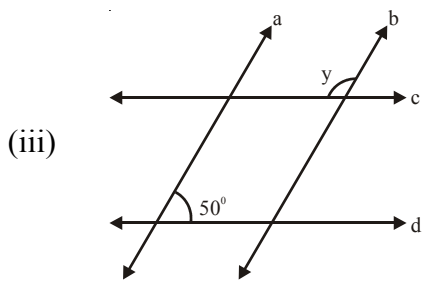
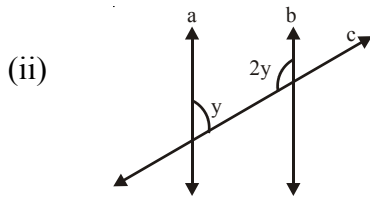
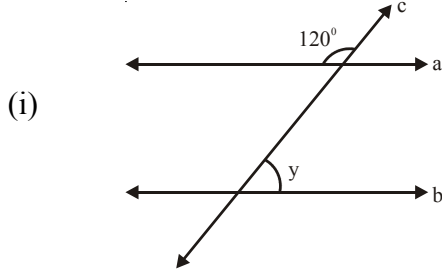


10. State the property that is used in each of the following statements :

- (i) If $l \parallel m$, then $\angle 4 = \angle 8$
- (ii) If $\angle 1 = \angle 7$, then $l \parallel m$
- (iii) If $\angle 3 + \angle 8 = 180^\circ$, then $l \parallel m$

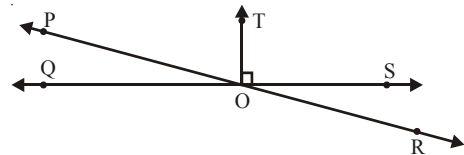


11. Find the value of y in each of the following figure if $a \parallel b$



12. In the following figure name the following pairs of angles :

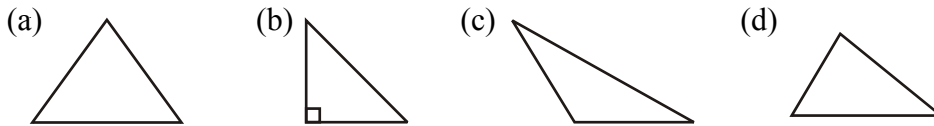
- (i) Obtuse vertically opposite angles.
- (ii) Adjacent complement angles
- (iii) Euqal supplementary angles
- (iv) Unequal supplementary angles
- (v) Adjacement angles that do not form a linear pair.



Chapter—6

The Triangle and its Properties

1. Which of the following figures will have its altitude outside the triangle.

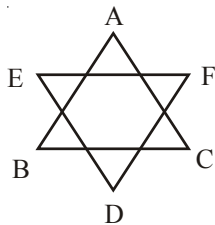


2. Fill up the blanks :

- (i) Every triangle has at least acute angles.
- (ii) The longest side of a right angled triangle is called its
- (iii) Median is also called in an equilateral triangle.
- (iv) The line segment joining a vertex of a triangle to the mid-point of its opposite side is called its.....

3. If one angle of a triangle is 60° and the other two angles are in the ratio 1 : 2, then find the angles.

4. In figure find the value of $\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$



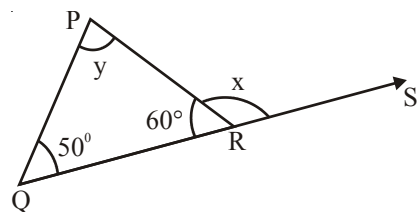
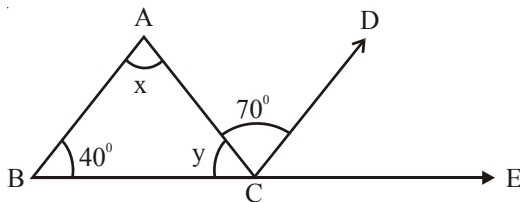
5. Two poles of 8m and 14m stand upright on a plane ground. If the distance between two tops is 10m. Find the distance between their feet.

6. Mohini walks 1200m due East and then 500m due North. How far is she from her starting point?

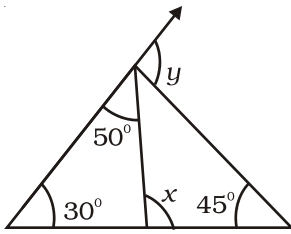
7. Find the value of x and y .

(i) Here $CD \parallel AB$

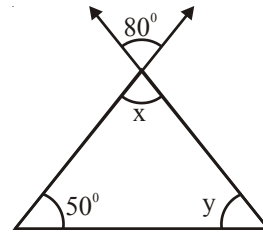
(ii)



(iii)

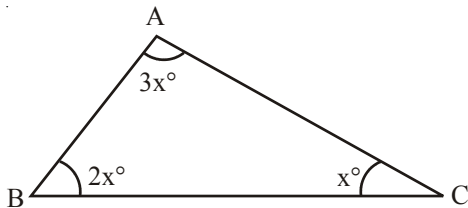


(iv)

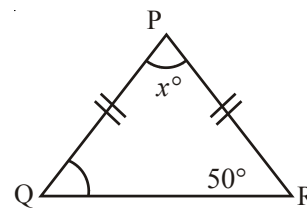


8. Find the value of x :

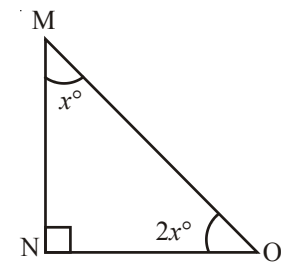
(i)



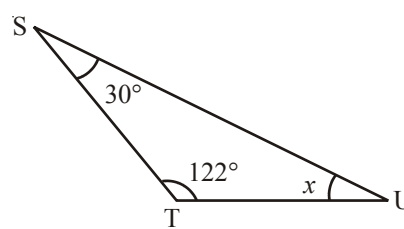
(ii)



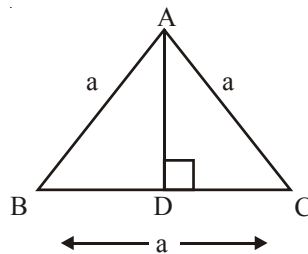
(iii)



(iv)



9. ABC is an equilateral triangle with side a . AD is an altitude. Find the value of AD^2 .



10. State whether the given statements are True or False :

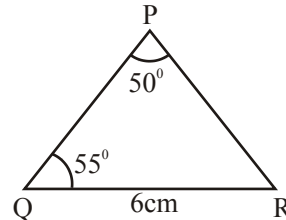
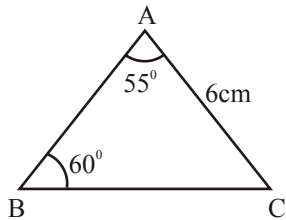
- (i) Sum of two sides of a triangle is greater than or equal to the third side.
- (ii) The difference between the lengths of any two sides of a triangle is smaller than the length of third side.
- (iii) Sum of any two angles of a triangle is always greater than the third angle.
- (iv) It is possible to have a right angled equilateral triangle.

Chapter—7

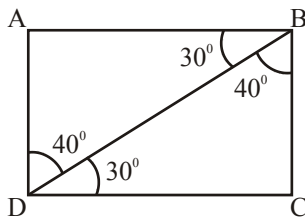
Congruence of Triangles

1. In each of the given of triangle applying only ASA congruence criterion, determine which triangle are congruent. Also write the congruent triangles in symbolic form.

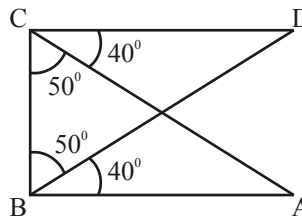
(a)



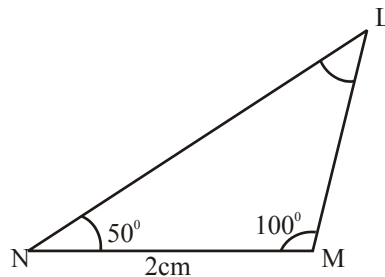
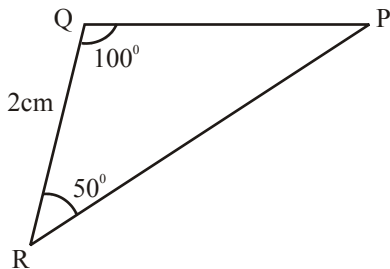
(b)



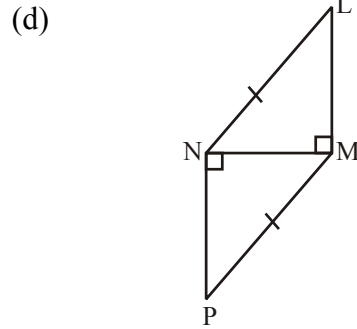
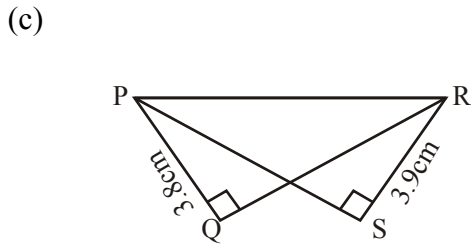
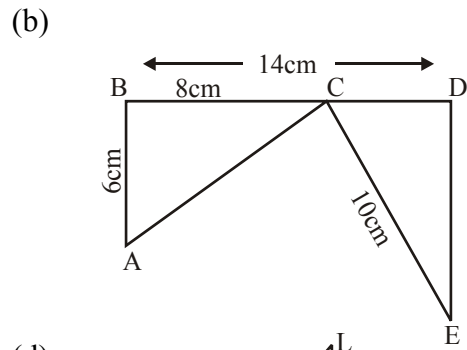
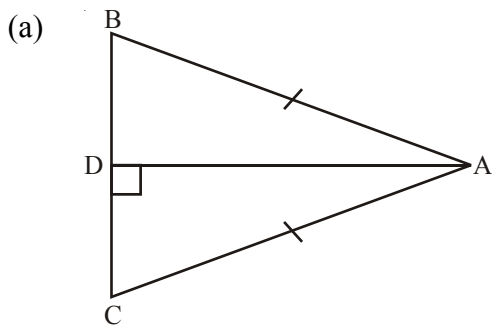
(c)



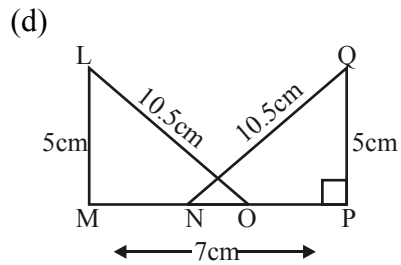
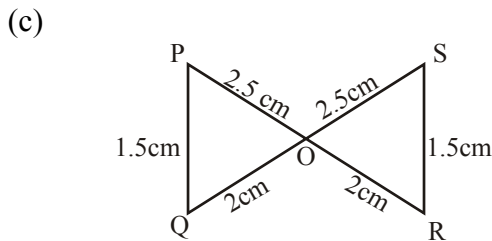
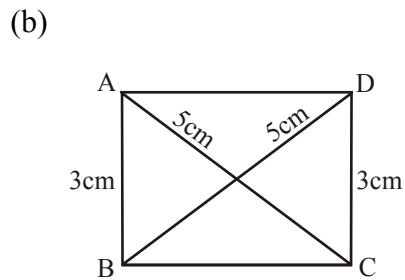
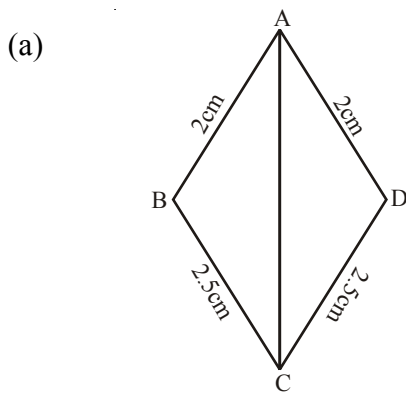
(d)



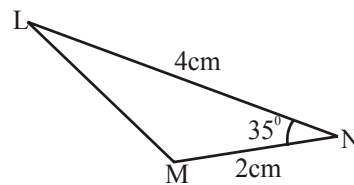
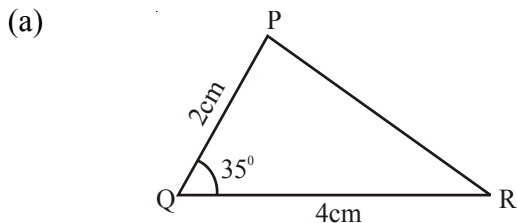
2. In each of the given pair of triangle applying only RHS congruence criterion, determine which pairs of triangles are congruent. Also write the congruent triangles in symbolic form.

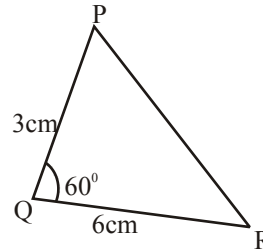
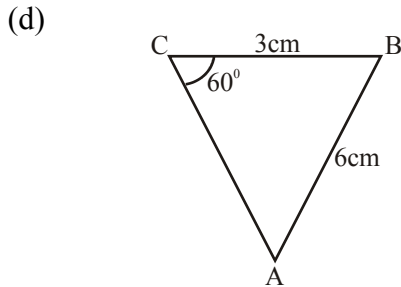
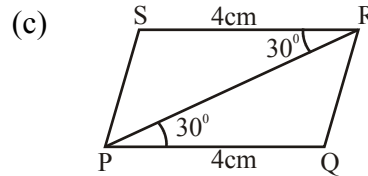
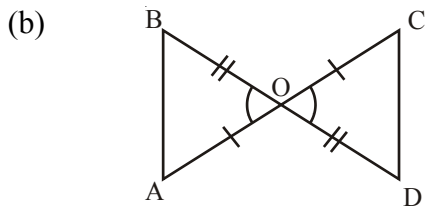


3. In each of the given pair of triangles applying only SSS congruence criterion, determine which pairs of triangles are congruent. Also write the congruent triangles in symbolic form.



4. In each of the given pair of triangles applying only SAS congruence criterion, determine which triangles are congruent. Also write the congruent triangles in symbolic form.





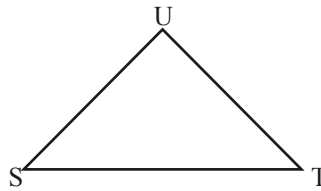
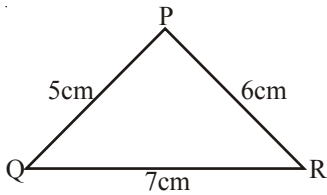
5. If $\triangle PQR$ and $\triangle LMN$ are congruent under the correspondence $QPR \leftrightarrow LMN$ then fill up the blanks :

- | | |
|--------------------------|--------------------------|
| (i) $\angle R =$ | (iv) $\angle QR =$ |
| (ii) $\angle P =$ | (v) $\angle QP =$ |
| (iii) $\angle Q =$ | (vi) $\angle RP =$ |

6. Triangles DEF and LMN are both isosceles with $DE = DF$ and $LM = LN$. If $DE = LM$ and $EF = MN$ then, are the two triangles congruent? Which condition do you use?

If $\angle E = 50^\circ$, what is the measure of $\angle N$?

7.



If $\triangle PQR$ is congruent to $\triangle STU$ then what is the length of TU?

8. State whether the given statements are True or False.

- If three corresponding angles of two triangles are equal then triangles are congruent.
- The congruent figures superimpose each other completely.
- The top and bottom faces of a kaleidoscope are congruent.
- Two figures are congruent, if both have the same shape.

Chapter—8

Comparing Quantities

- Find the ratio of (in lowest form) :
 - 200g to 4 Kg
 - 80 Paise to ₹ 2
 - 30 days to 36 hours
- If $3 : x :: 9 : 15$ then find the value of x .
- Express the following percents as the decimal fraction :
 - 0.07%
 - 15%
- Express each of the following percents as fraction in the simplest form :
 - $12\frac{1}{2}\%$
 - 75%
- Express each of the following fractions as percent :
 - $5\frac{1}{4}$
 - $\frac{9}{20}$
- Find 20% of ₹ 2500.
- Find the whole quantity if 40% of it is 500 km
- In the market cost of 1 dozen bananas are ₹ 48. Find the cost of 10 bananas.
- If the ratio of angles of a triangle is 2:3:4, then find the measure of these angles.
- If 75% of x is 18 then find the value of x .
- Chalk contains Calcium, Carbon and Oxygen in the ratio 10:3:12. Find the percentage of Carbon in chalk.
- In a city, 35% are females, 45% are males and remaining are children. What % are children?
- Compute the Simple Interest on a sum of ₹ 900 for 5 years at the ratio of 6% per annum.
- The cost price of 8 books is equal to the selling price of 6 books. Find the gain percent.
- What principal will amount to ₹ 900 in 6 years at 10% Simple Interest?
- There are 120 children live in Seemapuri 'J' Block. According to survey conducted in 2014, out of these 24 children do not go to school" Under the project "School Chale Hum" these students admitted in school on the basis of above statement answer the following questions.
 - In 2014, how many children did not go to school?
 - Under the Project "School Chale Hum" How many children admitted in school.

Chapter—9

Rational Numbers

1. Find the Sum:

(a) $-2\frac{1}{3} + 4\frac{3}{5}$ (b) $\frac{-8}{19} + \frac{(-2)}{57}$

2. Find :

(a) $\frac{-6}{13} - \left(\frac{-7}{15}\right)$ (b) $-2\frac{1}{9} - 6$

3. Find the product :

(a) $\frac{-6}{5} \times \frac{9}{11}$ (b) $\frac{3}{-5} \times \frac{-5}{3}$

4. Find the value of :

(a) $\frac{-4}{5} \div (-3)$ (b) $\frac{-7}{12} \div \left(\frac{-2}{13}\right)$

5. Fill in the boxes with the correct symbol out of $>$, $<$ and $=$

(a) $\frac{-7}{4}$ $\frac{-8}{5}$ (b) $\frac{-5}{11}$ $\frac{5}{11}$

(c) $\frac{1}{-3}$ $\frac{-1}{4}$

6. Which is greater in the following numbers?

$-3\frac{2}{7}$, $-3\frac{4}{5}$

7. The product of two rational numbers is $\frac{-4}{5}$. If one of them is $\frac{8}{35}$, find the other.

8. (a) What should be added to $\frac{-5}{8}$ to get $\frac{2}{9}$?

(b) Find three rational numbers between 0 and 1.

9. Find three rational numbers is $\frac{-17}{27}$. If one fo them is $\frac{-11}{27}$ find the other.

10. Simplify :

(a) $\frac{(-4)}{9} \times \frac{3}{5} \times \frac{(-9)}{10}$

(b) $\left[\frac{2}{7} + \frac{3}{49} \right] \left[\frac{-7}{15} \right]$

(c) $\frac{2}{3} + \frac{3}{4} + \frac{1}{12}$

(d) $(4.3 - 2.3) \times 6.3$ (e) $\left[\frac{-28}{27} \right] \div \left[\frac{-5}{9} \right]$

11. Arrange $\frac{-7}{8}, \frac{-5}{6}, \frac{-3}{4}$ in the ascending order.

12. Find the additive inverse of $\frac{5}{7} - \frac{3}{7}$

13. Find the multiplicative inverse of $\frac{2}{11} + \frac{4}{9}$

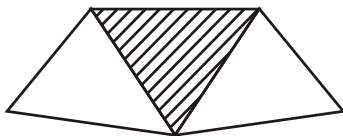
14. Find the reciprocal of $\frac{-7}{26} + \left(\frac{-11}{39} \right)$

15. Jaspal donates $\left(\frac{1}{5} \right)^{th}$ part of his monthly income and deposited $\left(\frac{1}{6} \right)^{th}$ part in the bank and expenditure the remaining income.

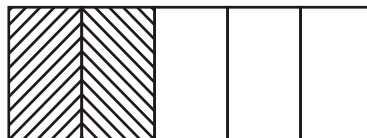
(a) Find the part of expenditure of his montly income.

(b) State two good habits of Jaspal mentioned on the basis of above questions.

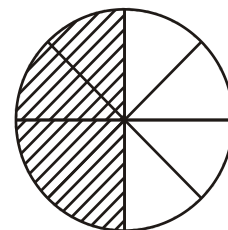
16. In the given figure represent the shaded region in the form of rational number.



(a)



(b)



(c)

Chapter—10

Practical Geometry

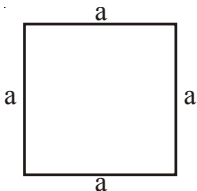
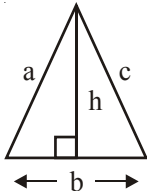
There are four options, out of which one is correct. (Choose the correct one (Q.1 to Q.4))

1. A triangle can be constructed by taking its sides as :
(a) 1.4 cm, 3.2 cm, 4.6 cm (b) 2.3 cm, 3.2 cm, 5.5 cm
(c) 1.8 cm, 1.8 cm, 5 cm (d) 2 cm, 3 cm, 4 cm
 2. A triangle can be constructed by taking two of its angles with any side as :
(a) 120° , 30° (b) 70° , 120° (c) 90° , 90° (d) 60° , 120°
 3. Which geometrical instrument can be used to draw an arc :
(a) Scale (b) Compass
(c) Set square 30° , 60° , 90° (d) Set square 45° , 45° , 90°
 4. How many lines can be drawn parallel to a given line, through a point outside the given line?
(a) Two (b) One (c) Many lines (d) None
 5. Construct a right angled triangle whose hypotenuse measures 5 cm and one of the other sides measures 3.2 cm.
 6. Draw two parallel lines at a distance of 5 cm apart.
 7. Draw a triangle whose sides are of length 4 cm, 5 cm and 6 cm.
 8. Construct an obtuse angled triangle which has a base of 5 cm and base angles of 30° and 110° .
 9. Construct a triangle ABC whose sides $AB = 3$ cm, $BC = 4$ cm and $\angle B = 60^\circ$.
- Fill up the blanks :
- (i) line (s) can be drawn parallel to a given line.
 - (ii) sides and the angle between them are enough to construct a triangle.
 - (iii) angles and the side included between them is enough to construct a triangle.
 - (iv) For construction of a triangle, the sum of three angles of a triangle should be

Chapter—11

Perimeter and Area

1. Complete the following Table :

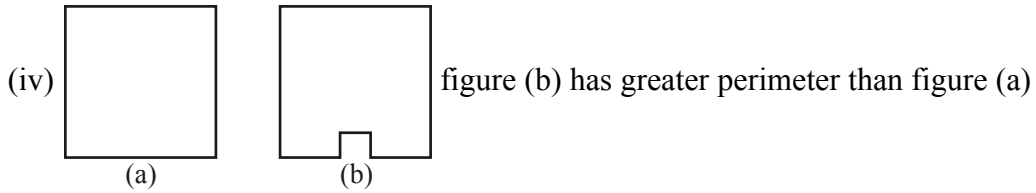
<i>Figure with Demension</i>	<i>Area</i>	<i>Perimeter</i>
(a) Square 
(b)	$l \times b$
(c)	$2\pi r$
(d) Triangle 

2. Fill up the blank :

- (i) $10000 \text{ m}^2 = \dots\dots\dots$ hecture
- (ii) $1 \text{ cm}^2 = \dots\dots\dots \text{ m}^2$
- (iii) $1 \text{ m}^2 = \dots\dots\dots \text{ cm}^2$
- (iv) $1 \text{ km}^2 = \dots\dots\dots \text{ m}^2$

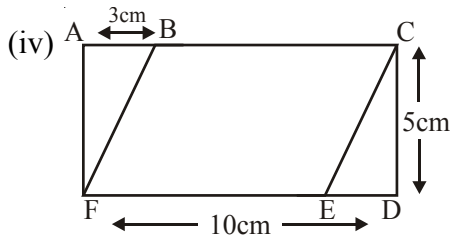
3. Perimeter of a square park is 2000 m. Find its area.

4. State whether the given statements are True or False:
- (i) All the triangles that are equal in area are congruent.
 - (ii) All congruent triangles are equal in area.
 - (iii) Ratio of the circumference and the diameter of a circle is more than 3.



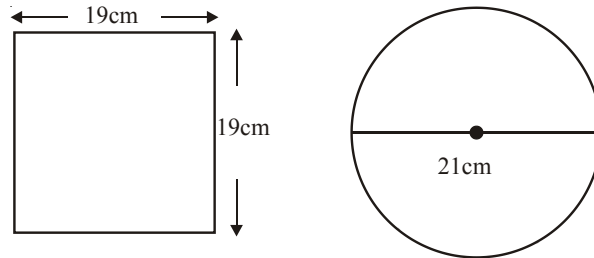
5. Fill up blanks :

- (i) Perimeter of a regular polygon = length of one side \times
- (ii) The distance around a circle is its
- (iii) If a wire in the shape of the square is rebent into a rectangle, then the of both shapes remain same, but may vary.

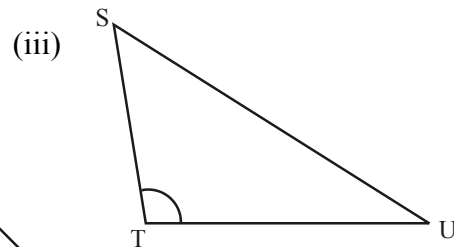
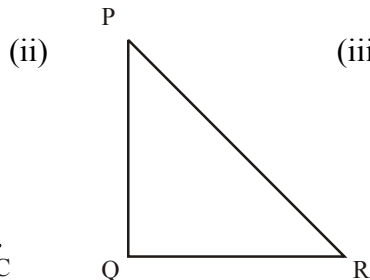
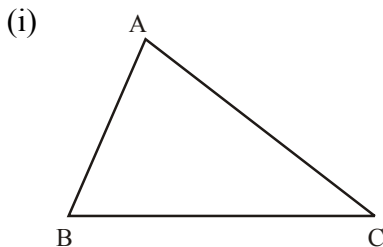


If figure area of parallelogram BCEF is cm^2 where ACDF is a rectangle.

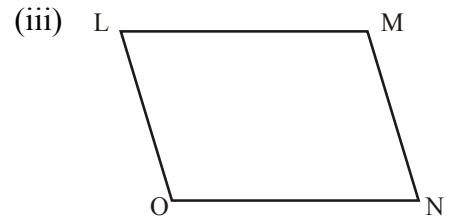
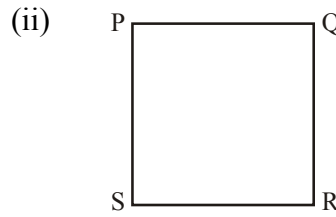
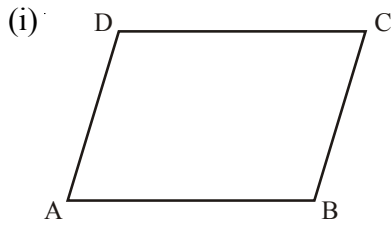
6. A shopkeeper sells two kinds of 'Till Patti'. A square 'Till Patti' of side 19 cm cost ₹ 25 and a circular 'Till Patti' of diameter 21 cm cost ₹ 25 which Till Patti is a better deal and why?



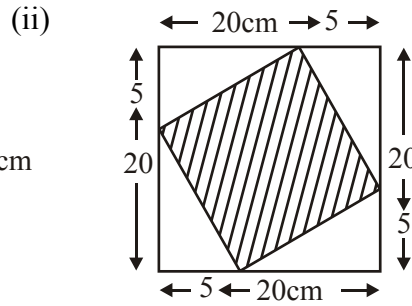
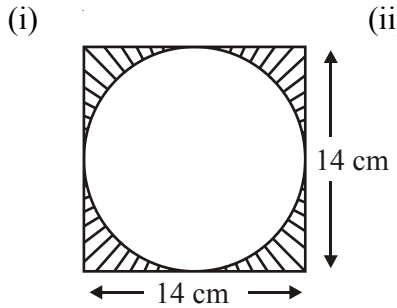
7. After measuring dimension find the area of each of the following triangles using formula, Area = $\frac{1}{2} \times \text{Base} \times \text{Height}$



8. After measuring dimensions, find the area of each of the parallelogram using formula, $\text{Area} = \text{Base} \times \text{Height}$



9. Find the area of shaded region in the following figures :



10. The Taj Mahal was created in the 17th century by Emperor Shah Jahan to honour the memory of his beloved wife Mumtaz Mahal. The design of the Taj Mahal is based on the number four and its multiples.

The garden at the Taj Mahal was laid out in four squares of the same size. Each square was divided into four flower beds, with 400 flowers in each bed. How many flowers were in the garden?

Chapter—12

Algebraic Expressions

- Simplify :
 - $2x - \{5y - (x - 2y)\}$
 - $5a - \{3a - (2 - a) + 4\}$
- Pallavi spends ₹ x daily and saves ₹ y per day. What is her income after 3 weeks?
- If $P = -10$, find the value of $P^2 - 2P - 100$.
- If $a + b = 6$, then find the value of $\frac{1}{2}a + \frac{1}{2}b$.
- From the sum of $3x - y + 11$ and $-y - 11$, subtract $3x - y - 11$.
- Write down the numerical coefficient in each of the following terms.
 - xy
 - $-3xy$
 - $2p^3$
 - $-5abc$
- Simplify the expression and find its value when $a = 5$ and $b = -3$. $2(a + ab) + 3 - ab$
- Add $4x^2y$, $8x^2y$ and $-2x^2y$.
- Solve and verify your answer.
$$\frac{2}{21}x + 8 = x + 6$$
- What should be added to $a^2 + ab + b^2$ to obtain $4ab + b^2$?
- The length of a rectangular field is 6m less than three times its breadth. Find the dimensions of the rectangle if its perimeter is 148 m.
- Collect like terms and simplify the expression :
$$12m^2 - 9m + 5m - 4m^2 - 7m + 10$$
- What should be subtracted from $a^3 - 4a^2 + 5a - 6$ to obtain $a^2 - 2a + 1$?
- In an isosceles triangle, the base angles are equal, the vertex angle is twice either the base angle. What are the degree measures of the angles of triangle?
- A bag contains 25 paise and 50 paise coins whose total value is ₹ 30. If the total number of 25 paise coins is four times that of 50 paise coins, find the number of each type of coins.

Chapter—13

Exponents and Powers

1. Fill in the blanks :

(a) $\left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) = \left[\dots\dots\dots \right]^4$

(b) $(-3)^3 \times (-3)^4 = \dots\dots\dots$

2. Evaluate :

(a) Find the value of x :

$$\left(\frac{-7}{5}\right)^{11} \div \left(\frac{-7}{5}\right)^3 = \left(\frac{-7}{5}\right)^{2x+2}$$

(b) Find the value of a :

$$\left[\left(\frac{3}{13}\right)^8 \right]^3 = \left(\frac{3}{13}\right)^{a+1}$$

3. Match of column :

Column 'A'

Column 'B'

(a) $x^m \times x^n$

(i) x^{mn}

(b) $x^m \div x^n$

(ii) 1

(c) $(x^m)^n$

(iii) $(xy)^n$

(d) $x^n \times y^n$

(iv) x^{m-n} ($m > n$)

(e) x^o

(v) x^{m+n}

4. Write in the standard form :

(a) The distance between Earth and Moon is 384,000 km.

(b) Speed of light in vacuum is 300,000,000 m/s

(c) 0.0034256

5. Find the value of x :

(a) $5^{\left(\frac{2}{5}\right)} = 5^x$

(b) $(2^6 \div 2^{-3}) \times 2^{14} = 2^x$

6. Simplify :

$$(a) \frac{\left(\frac{4}{7}\right) \times \left(\frac{2}{3}\right)^2}{\frac{4}{9} \times \left(\frac{4}{7}\right)^3}$$

$$(b) \frac{25 \times 5^2 \times t^8}{10^3 \times t^4}$$

7. Simplify :

$$(a) (-3)^2 \times (-5)^2$$

$$(b) [(-16)^6 \div (-16)^3] \times (-16)^{-3}$$

8. Find the value of :

$$(a) 2^\circ \times 3^\circ \times 4^\circ$$

$$(b) 3^\circ \times 5^\circ + 19^\circ$$

$$(c) (7^\circ \div 3^\circ) \times (8^\circ - 5^\circ)$$

$$(d) 4^\circ \times 6^\circ + 100^\circ$$

9. Fill in the blanks :

$$(-19)^{11} \div (-19)^{15} = \frac{1}{(-19)^{\square}}$$

10. Simplify and write the answer in scientific notation :

$$(a) (5 \times 10^3) \times (3 \times 10^5)$$

$$(b) \frac{4.5 \times 10^6}{0.9 \times 10^5}$$

11. Find m for the following :

$$(a) \left(\frac{8}{9}\right)^5 \times \left(\frac{9}{4}\right)^5 = (2)^m$$

$$(b) (7)^3 \div (2)^m = \left(\frac{7}{2}\right)^3$$

12. Using the standard form, write number 73984 in expanded form.

Chapter—14

Symmetry

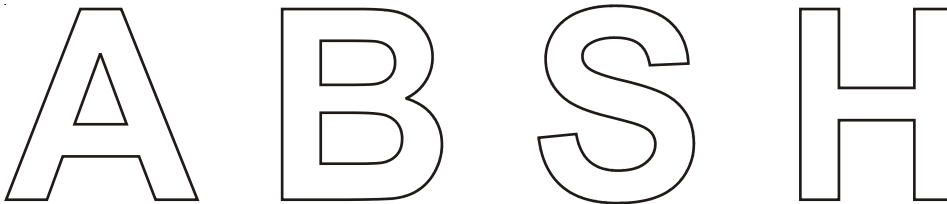
1. Fill in the blanks :

- (i) Rotation turns an object about a fixed point. This fixed point is called
- (ii) Order of rotational symmetry of a circle is
- (iii) Rhombus is a figure that has lines of symmetry and has a rotational symmetry of order
- (iv) is a figure that has neither a line of symmetry nor a rotational symmetry.

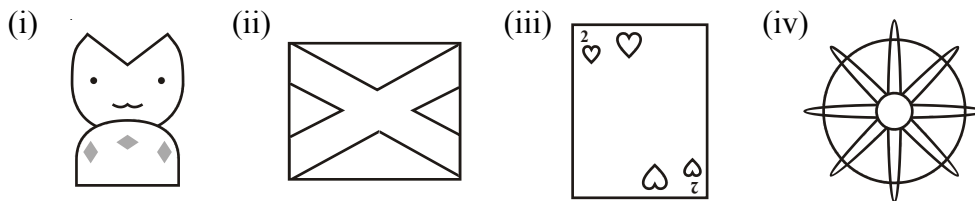
2. State whether the given statements are True or False :

- (i) A regular pentagon has no lines of symmetry.
- (ii) Mirror reflection leads to symmetry always.
- (iii) The number of lines of symmetry of a regular polygon is equal to the vertices of the polygon.
- (iv) An angle has two lines of symmetry.

3. Draw all the lines of symmetry for the following letters if they exist.



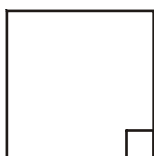
4. In each of the following figures write the number of lines of symmetry and order of rotational symmetry.



5. Angle of rotation of a figure is 40° . What is the number of lines of symmetry?

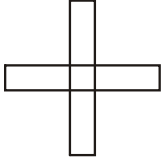
6. What is the centre of rotation of an equilateral triangle?

7. In the given square



- (i) Find the number of lines of symmetry.
- (ii) What is the order of rotational symmetry?

8. In the given figure :

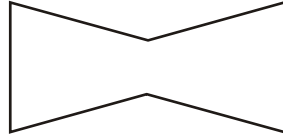


- (i) Find the order of rotational symmetry.
- (ii) Find the degree measure of the angle of rotation.

9. Draw all lines of symmetry for each of the following figures given below :



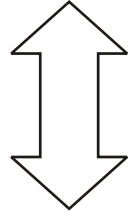
(i)



(ii)



(iii)

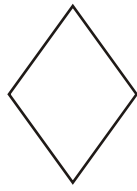


(iv)

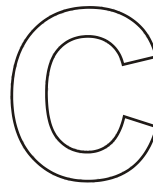
10. Tell whether each figure has rotational symmetry or not.



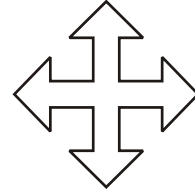
(i)



(ii)



(iii)

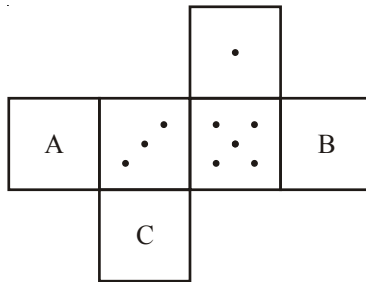


(iv)

Chapter—15

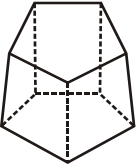
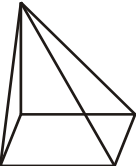
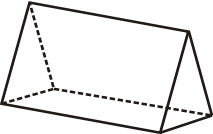
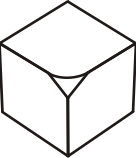
Visualising Solid Shapes

1. Net of dice is given below, answer the following questions:

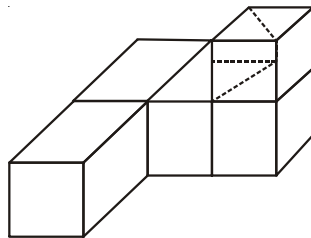


- (i) Find the number of dots on the face C of the dice?
 - (ii) Find the number of dots on the face B of the dice?
 - (iii) Find the sum of dots on faces A and B in the given figure.
 - (iv) What is the sum of dots on opposite faces of a die?
2. How many rectangles are in the net of rectangular pyramid?
3. State whether the given statements are 'True' or 'False'.
- (i) In oblique sketch of the solid the measurements are kept proportional.
 - (ii) The measurements are of exact size in an isometric sketch.
 - (iii) While sphere is a 2-D figure, circle is a 3-D figure.
 - (iv) The circle, the square, the rectangle and the triangle are example of plane figures.
4. Fill up the blanks :
- (i) The solid with one circular face, one curved surface and one vertex is called
 - (ii) Total no. of edges a cylinder are
 - (iii) A solid with no vertex is
 - (iv) The common portion of two adjacent faces of a cuboid is called

5. Complete the following table :

Figure	No. of Faces	No. of Edges	No. of Vertices
(i) 
(ii) 
(iii) 
(iv) 

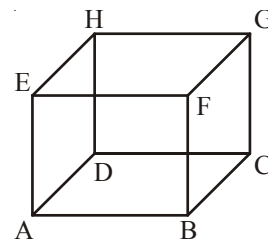
6. Draw the top, the front and the side views of the given solid made up of cubes.



7. Draw an isometric view of a cuboid 5 cm × 3 cm × 2 cm.

8. Form the above figure answer the following questions:

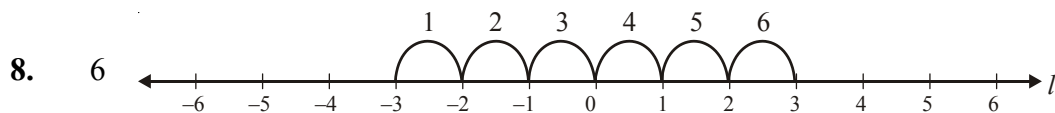
- (i) Which edge is the intersection of faces EFGH and EFBA?
- (ii) Which faces intersect at edge FB?
- (iii) Give all the edges that are perpendicular to edge AB.
- (iv) Give four vertices that do not all lie in one plane.
- (iv) If we subtract.....from 53214 than the number so obtained is divisible by 8.



Answers

Chapter—1

1. (a) 10 (b) -1 (c) -205 (d) -10 (e) 12
2. $P = -15$
3. 0
4. (a) (v) (b) (iii) (c) (i) (d) (ii) (e) (iv)
5. (a) $>$ (b) $<$ (c) $=$
6. (a) -120 (b) -79500 (c) 1180
7. 30 min.



9. -2099
10. (a) True (b) True (c) True
11. -8
12. 25
13. ₹ 450
14. 7
- 15.

Operations	18	36	54	72
$+25$	43	61	79	97
-17	1	19	37	55
$\times 6$	108	216	324	432
$\div 18$	1	2	3	4

Chapter—2

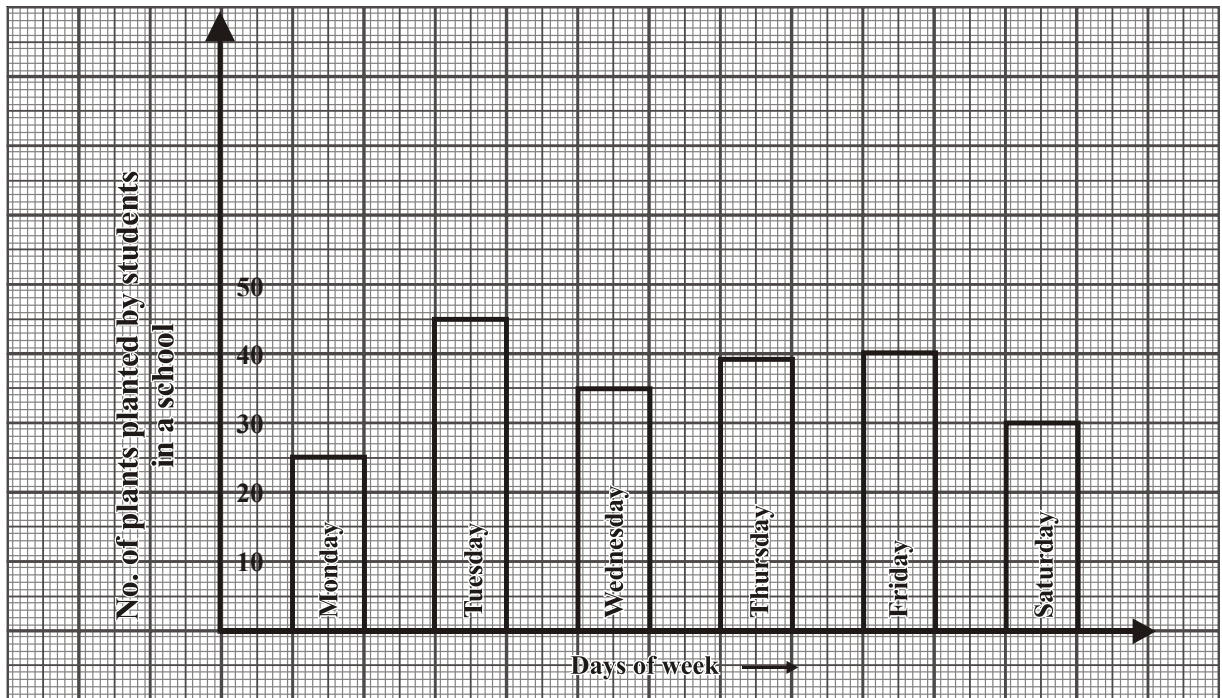
1. (a) $\frac{7}{6}$ (b) $\frac{1}{21}$
2. (a) $\frac{10}{21}$ (b) $\frac{6}{23}$
3. 28

4. (a) $\frac{1}{4}$ (b) 37
5. $\frac{5}{6}$
6. 4 Toffees
7. 40.6 km
8. ₹ 17.84
9. Kartikeya, 50 g
10. (a) 4.730 kg (b) 8.004 kg
11. $\frac{3}{5}$ part Somu had the large share, $\frac{1}{5}$
12. (a) $\frac{1}{4}$ (b) 0.95
13. (a) 1 (b) 12 (c) 2.1 (d) $\frac{1}{3}$ (e) 0.356
14. 22 m
15. (a) $\frac{1}{4}$ (b) $\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$ (c) $\frac{1}{12}$

Chapter—3

1. (i) 3 (ii) 11 (iii) 48 (iv) 3
2. (i) $\frac{1}{6}$ (ii) $\frac{1}{2}$ (iii) $\frac{1}{2}$ (iv) $\frac{1}{2}$
3. 3
4. 35
5. (i) False (ii) False (iii) True (iv) False
6. (i) Mathematics (ii) 73.6 (iii) Hindi, Mathematics (iv) 73.6%

7. (i)



(ii) Tuesday (iii) 5:9 (iv) 213

8. (i) Cricket (ii) 48 (iii) 24 (iv) Tennis

Chapter—4

1. (a) $x = 72$ (b) $x = -\frac{-5}{11}$ (c) $x = 1.8$

2. (a) If you add 3 to one third of z, you get 30.
 (b) One-fourth of a number x minus 4 gives 4.

3. (a) $2(2b + 5) = 250$ (b) $\frac{x}{3} = 3x - 8$

4. $y = \frac{4}{3}$ 5. (a) $m = 7$ (b) $n = 2$

6. (a) 30 trees (b) (1) Trees give us fruits, (any two benefits)
 (2) Trees make environment pure.

7. $40^\circ, 50^\circ$

8. 35°

9. $\frac{3}{4}y + 3 = 21, y = 24$

10. 40 year, 50 year

11. 30 year, 65 year

12. 30

Chapter—5

1. (a) 25° (b) 135° (c) 180° (d) Two lines or two surfaces
2. $\angle 1$ & $\angle 5$, $\angle 2$ & $\angle 6$, $\angle 4$ & $\angle 8$, $\angle 3$ & $\angle 7$
3. (a)
4. (a) False (b) False (c) False (d) True
5. (i) $\angle LGR = 70^\circ$ (ii) $\angle LMN = 70^\circ$
6. (i) $\angle a$ & $\angle d$ (ii) $\angle a$ & $\angle e$, $\angle e$ & $\angle d$
7. No. because vertex is not common
8. (i) 45° (ii) 90°
9. (i) Yes (ii) No (iii) Yes
10. (i) Correspondign angles
(ii) Corresponding & vertically opposite angles
(iii) Linear Pair
11. (i) $y = 60^\circ$ (ii) $y = 60^\circ$ (iii) $y = 130^\circ$
12. (i) $\angle POS$ & $\angle QOR$
(ii) $\angle QOP$ & $\angle POT$
(iii) $\angle QOT$ & $\angle TOS$
(iv) $\angle POQ$ & $\angle QOR$, $\angle POQ$ & $\angle POS$
(v) $\angle TOS$ & $\angle SOR$, $\angle POQ$ & POT , $\angle POT$ & $\angle TOS$

Chapter—6

1. C
2. (i) 2 (ii) Hypotenuse (iii) Altitude or Perpendicular bisector
(iv) Median
3. 40° , 80°
4. 360°
5. 8m
6. 1300 m
7. (i) $x = 70^\circ$ $y = 70^\circ$
(ii) $x = 120^\circ$ $y = 70^\circ$
(iii) $x = 80^\circ$ $y = 75^\circ$
(iv) $x = 80^\circ$ $y = 50^\circ$
8. (i) 30 (ii) 80° (iii) 30 (iv) 80
9. $AD^2 = \frac{3a^2}{4}$
10. (i) False (ii) True (iii) False (iv) False

Chapter—7

1. (a) Not possible
(b) Yes $\triangle ABD \cong \triangle CDB$
(c) Yes $\triangle DCB \cong \triangle ABC$
(d) Yes $\triangle RQP \cong \triangle NML$
2. (a) Yes $\triangle ACD \cong \triangle ABD$
(b) Yes $\triangle ABC \cong \triangle CDE$
(c) Not possible
(d) Yes $\triangle NML \cong \triangle MNP$
3. (a) Yes $\triangle ABC \cong \triangle ADC$
(b) Yes $\triangle ABC \cong \triangle DCB$
(c) Yes $\triangle PQO \cong \triangle SRO$
(d) Yes $\triangle LMO \cong \triangle QPN$
4. (a) Yes $\triangle PQR \cong \triangle MNL$
(b) Yes $\triangle AOB \cong \triangle COD$
(c) Yes $\triangle PRS \cong \triangle RPQ$
(d) Not possible
5. (i) $\angle R = \angle N$ (iv) $QR = LN$
(ii) $\angle P = \angle M$ (v) $QP = LM$
(iii) $\angle Q = \angle L$ (vi) $RP = NM$
6. SSS, $\angle N = 50^\circ$
7. 7 cm
8. (i) False (ii) True (iii) True (iv) True

Chapter—8

1. (a) 1 : 20 (b) 2 : 5 (c) 20 : 1
2. $x = 5$
3. (a) 0.0007 (b) 0.15
4. (a) $\frac{1}{8}$ (b) $\frac{3}{4}$
5. (a) 525% (b) 45%
6. ₹ 500
7. 1250 km

8. ₹ 40
 9. $40^\circ, 60^\circ, 80^\circ$
 10. $x = 24$
 11. 12%
 12. 20%
 13. ₹ 270
 14. $33\frac{1}{3}\%$
 15. ₹ 562.50
 16. (a) 20% (b) 100%

Chapter—9

1. (a) $\frac{34}{15}$ (b) $\frac{-26}{57}$
 2. (a) $\frac{1}{195}$ (b) $\frac{-73}{9}$
 3. (a) $\frac{-54}{55}$ (b) 1
 4. (a) $\frac{4}{15}$ (b) $\frac{91}{24}$
 5. (a) $<$ (b) $=$ (c) $>$
 6. $-3\frac{2}{7}$
 7. $\frac{-7}{2}$
 8. (a) $\frac{61}{72}$ (b) $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$
 9. $\frac{-2}{9}$
 10. (a) $\frac{6}{25}$ (b) $\frac{-1}{21}$ (c) $\frac{3}{2}$ (d) 12.6 or $\frac{63}{5}$ (e) $\frac{28}{15}$
 11. $\frac{-7}{8} < \frac{-5}{6} < \frac{-3}{4}$

12. $\frac{-2}{7}$

13. $\frac{99}{62}$

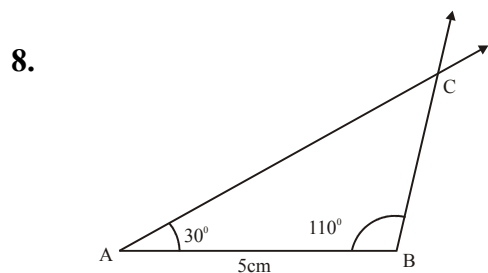
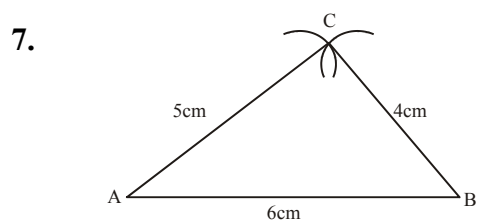
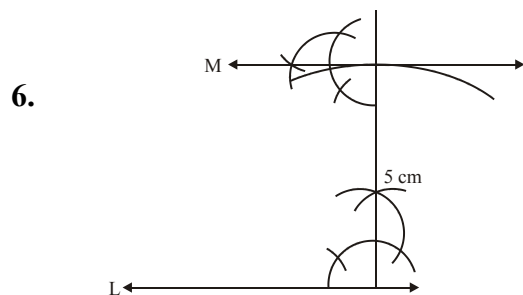
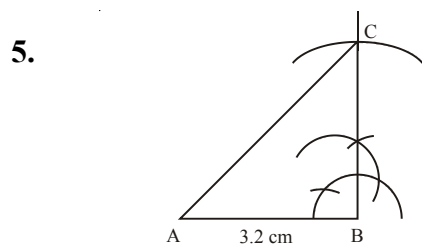
14. $\frac{-78}{43}$

15. (a) $\left(\frac{19}{30}\right)^{th}$ part (b) Two good habits : (1) Saving (2) Donation

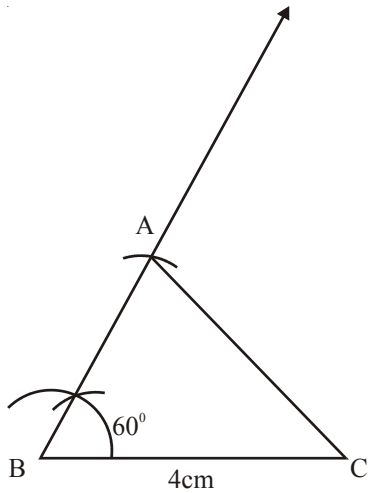
16. (a) $\boxed{\frac{1}{3}}$ (b) $\boxed{\frac{2}{5}}$ (c) $\boxed{\frac{4}{8}} = \boxed{\frac{1}{2}}$

Chapter—10

1. (d) 2. (a) 3. (b) 4. (b)



9.



10. (i) Infinite (ii) 2, 1 (iii) 2, 1 (iv) 180°

Chapter—11

- | | | | | |
|----|-----|-------|-----------------|-------------|
| 1. | (a) | | a^2 | $4a$ |
| | (b) | | _____ | $2(l + b)$ |
| | (c) | _____ | πr^2 | _____ |
| | (d) | _____ | $\frac{1}{2}bh$ | $a + b + c$ |

2. (i) 1 (ii) 100 (iii) 10000 (iv) 1000000

3. 250000 m^2

4. (i) False (ii) True (iii) True (iv) True

5. (i) Number of sides
 (ii) Circumference
 (iii) Perimeter, Area
 (iv) 35

6. Square shape till pati is a better deal because its area is more than circular shape till patti.

9. (i) 42cm^2 (ii) 425 59. unit

10. 6400 Flowers

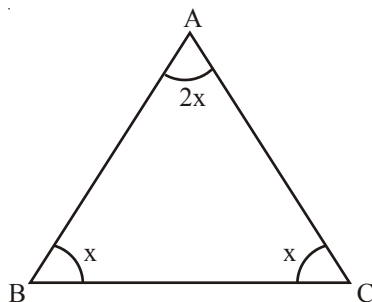
Chapter—12

1. (a) $3x + 7y$ (b) $a + 2$
 2. ₹ 21 (x + y)

3. 20 4. 3 5. $-y + 11$
 6. (i) 1 (ii) -3 (iii) 2 (iv) -5
 7. $2a^2 + ab + 3$, 38
 8. $10x^2y$

9. $x = \frac{42}{19}$ Check \Rightarrow L.H.S. $\Rightarrow \frac{2}{21}x + 8 = \frac{2}{21} \times \frac{42}{19} + 8 = \frac{4}{19} + 8 = \frac{4+152}{19} = \frac{156}{19}$
 R.H.S. $= x + 6 = \frac{42}{19} + 6 = \frac{42+114}{19} = \frac{156}{19}$
 $=$ L.H.S. $=$ R.H.S

10. $2ab - b^2$
 11. Length = 54 m, Breadth = 20 m
 12. $8m^2 - 11m + 10$
 13. $a^3 - 5a^2 + 7a - 7$
 14. Each of base angle = 45°
 Vertex angle = 90°
 $\Rightarrow 45^\circ, 45^\circ$ & 90°



15. 50 Paise coins = 20
 25 Paise coins = 80

Chapter—13

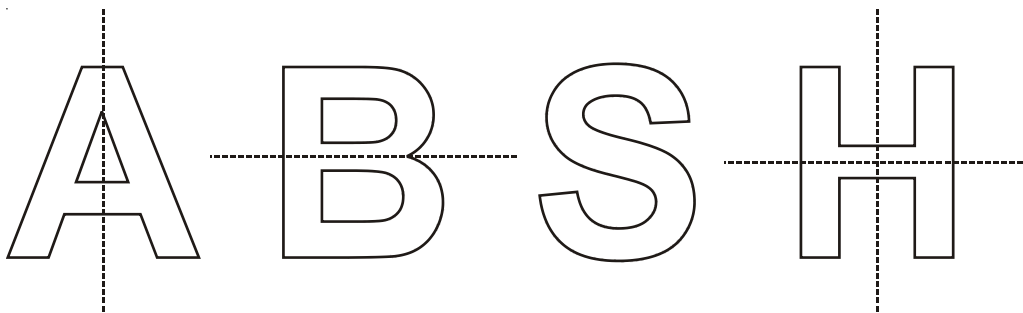
1. (a) $\left(\frac{-2}{3}\right)$ (b) $(-3)^7$
 2. (a) $x = 3$ (b) $a = 23$
 3. Column 'A' (Column 'B')
 (a) (v)
 (b) (iv)
 (c) (i)
 (d) (iii)
 (e) (ii)
 4. (a) 3.84×10^5 km
 (b) 3×10^8 m/s
 (c) 3.4256×10^{-3}

5. (a) 32 (b) 23
6. (a) $\frac{16}{49}$ (b) $\frac{5t^4}{8}$
7. (a) 225 (b) 1
8. (a) 1 (b) 3 (c) 0 (d) 2
9. $\frac{1}{(-19)^4}$
10. (a) 1.5×10^9 (b) 5×10^1
11. (a) $m = 5$ (b) $m = 3$
12. $7 \times 10^4 + 3 \times 10^3 + 9 \times 10^2 + 8 \times 10^1 + 4 \times 10^0$

Chapter—14

1. (i) Centre of rotation (ii) Infinite or uncountable
(iii) 2, 2 (iv) Quadrilateral
2. (i) False (ii) False (iii) True (iv) False

3.



4. (i) 1 (ii) 2, 2 (iii) 0, 1 (iv) 4, 4

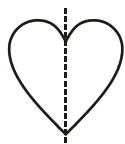
5. 9

6. Centroid

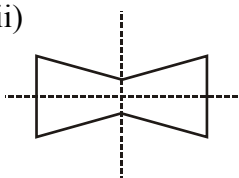
7. 4, 4

8. 4, 90°

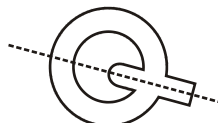
9. (i)



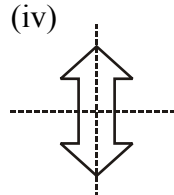
(ii)



(iii)



(iv)



10. (i) No (ii) Yes (iii) No (iv) Yes

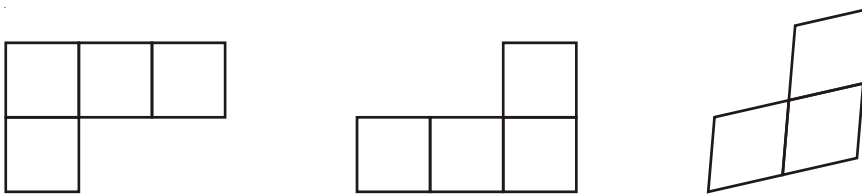
Chapter—15

1. (i) 6 (ii) 4 (iii) 7
 2. 6
 3. (i) False (ii) True (iii) False (iv) True
 4. (i) Cone (ii) O (iii) Sphere (iv) Edge

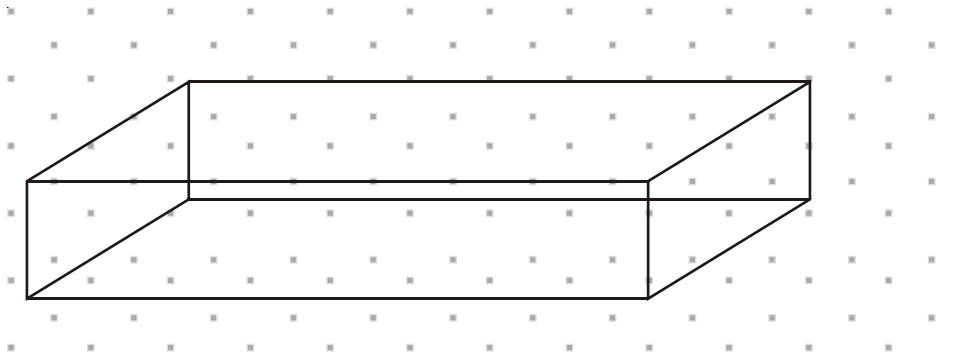
5.

	<i>No. of faces</i>	<i>No. of edes</i>	<i>No. of vertices</i>
(i)	7	15	10
(ii)	5	8	5
(iii)	5	9	6
(iv)	7	15	10

6. Top view Front view Side view



7.



8. (i) EF
 (ii) ABFE, BFGC
 (iii) AE, BF, AD, BC
 (iv) A, E, C, B (Group of pains may differ)