**Example 1:** The cost of 5 metres of a particular quality of cloth is ₹ 210. Tabulate the cost of 2, 4, 10 and 13 metres of cloth of the same type.

**Example 3:** If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh $2\frac{1}{2}$ kilograms?

**Example 7:** 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?

**Example 8:** 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?

**2.** In a Television game show, the prize money of ₹ 1,00,000 is to be divided equally amongst the winners. Complete the following table and find whether the prize money given to an individual winner is directly or inversely proportional to the number of winners?

| **Number of winners** | 1 | 2 | 4 | 5 | 8 | 10 | 20 |
|---|---|---|---|---|---|---|---|
| **Prize for each winner (in ₹)** | 1,00,000 | 50,000 | ... | ... | ... | ... | ... |

**11.** 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?

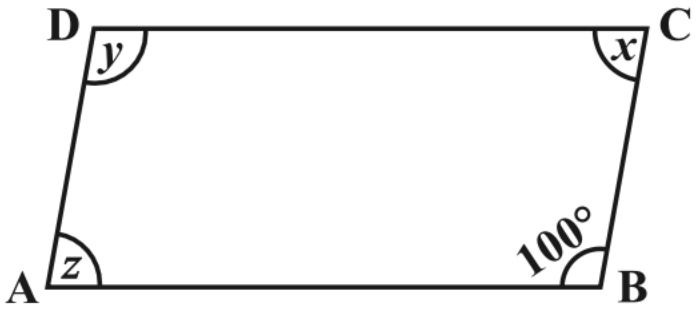
**2.** What is a regular polygon?

State the name of a regular polygon of

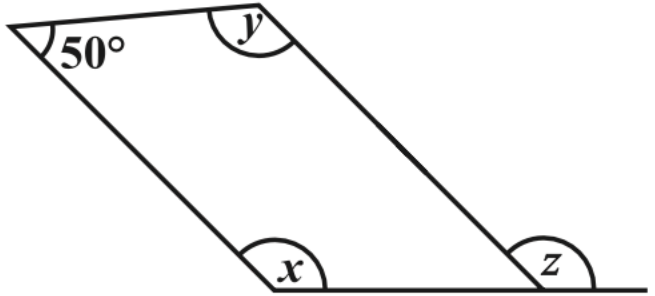
(i) 3 sides (ii) 4 sides (iii) 6 sides

2. Find the measure of each exterior angle of a regular polygon of
   (i) 9 sides (ii) 15 sides
3. How many sides does a regular polygon have if the measure of an exterior angle is 24°?
4. How many sides does a regular polygon have if each of its interior angles is 165°?

**2.** Consider the following parallelograms. Find the values of the unknowns $x$, $y$, $z$.




(i)

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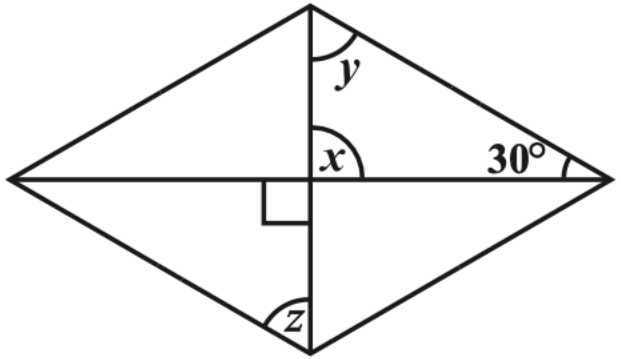


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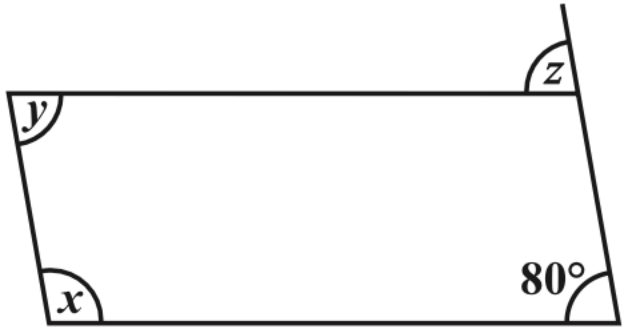
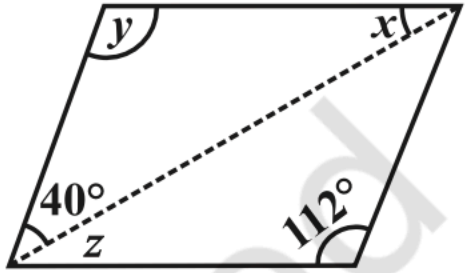



(iv)




(v)

**5.** The number of students in a hostel, speaking different languages is given below. Display the data in a pie chart.

| Language | Hindi | English | Marathi | Tamil | Bengali | Total |
|---|---|---|---|---|---|---|
| Number of students | 40 | 12 | 9 | 7 | 4 | 72 |

4. 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 .

   (i) getting a number 6?

   (ii) getting a number less than 6?

   (iii) getting a number greater than 6?

   (iv) getting a 1-digit number?

5. If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting a green sector? What is the probability of getting a non blue sector?

**9.** If 400 students voted in all, then how many did vote 'Others' colour as their favourite?

(a) 6 (b) 20 (c) 24 (d) 40

**10.** Which of the following is a reasonable conclusion for the given data?

(a) $\frac{1}{20}$th student voted for blue colour

(b) Green is the least popular colour

(c) The number of students who voted for red colour is two times the number of students who voted for yellow colour

(d) Number of students liking together yellow and green colour is approximately the same as those for red colour.

**11.** Listed below are the temperature in °C for 10 days.

–6, –8, 0, 3, 2, 0, 1, 5, 4, 4

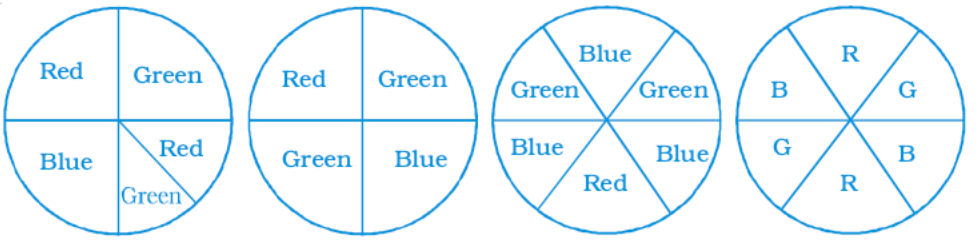
What is the range of the data?

(a) 8 (b) 13°C (c) 10°C (d) 12°C

**12.** Ram put some buttons on the table. There were 4 blue, 7 red, 3 black and 6 white buttons in all. All of a sudden, a cat jumped on the table and knocked out one button on the floor. What is the probability that the button on the floor is blue?

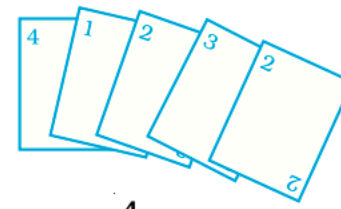
(a) $\frac{7}{20}$ (b) $\frac{3}{5}$ (c) $\frac{1}{5}$ (d) $\frac{1}{4}$

**13.** Rahul, Varun and Yash are playing a game of spinning a coloured wheel. Rahul wins if spinner lands on red. Varun wins if spinner lands on blue and Yash wins if it lands on green. Which of the following spinner should be used to make the game fair?



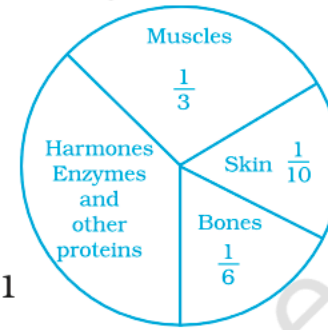

(a) (i) (b) (ii) (c) (iii) (d) (iv)

**19.** Rohan and Shalu are playing with 5 cards as shown in the figure. What is the probability of Rohan picking a card without seeing, that has the number 2 on it?




(a) $\frac{2}{5}$ (b) $\frac{1}{5}$ (c) $\frac{3}{5}$ (d) $\frac{4}{5}$

**20.** The following pie chart represents the distribution of proteins in parts of a human body. What is the ratio of distribution of proteins in the muscles to that of proteins in the bones?




(a) 3 : 1 (b) 1 : 2 (c) 1 : 3 (d) 2 : 1

**21.** What is the central angle of the sector (in the above pie chart) representing skin and bones together?

(a) 36° (b) 60° (c) 90° (d) 96°

**22.** What is the central angle of the sector (in the above pie chart) representing hormones enzymes and other proteins.

(a) 120° (b) 144° (c) 156° (d) 176°

**23.** A coin is tossed 12 times and the outcomes are observed as shown below:

The chance of occurrence of Head is

(a) $\frac{1}{2}$ (b) $\frac{5}{12}$ (c) $\frac{7}{12}$ (d) $\frac{5}{7}$

**24.** Total number of outcomes, when a ball is drawn from a bag which contains 3 red, 5 black and 4 blue balls is

(a) 8 (b) 7 (c) 9 (d) 12

**25.** A graph showing two sets of data simultaneously is known as

(a) Pictograph (b) Histogram (c) Pie chart (d) Double bar graph

**Example 33 :** Each interior angle of a polygon is 108°. Find the number of sides of the polygon.

**20.** How many diagonals does a hexagon have?

(a) 9 (b) 8 (c) 2 (d) 6

**21.** If the adjacent sides of a parallelogram are equal then parallelogram is a

(a) rectangle (b) trapezium (c) rhombus (d) square

**22.** If the diagonals of a quadrilateral are equal and bisect each other, then the quadrilateral is a

(a) rhombus (b) rectangle (c) square (d) parallelogram

**23.** The sum of all exterior angles of a triangle is

(a) 180° (b) 360° (c) 540° (d) 720°

**24.** Which of the following is an equiangular and equilateral polygon?

(a) Square (b) Rectangle (c) Rhombus (d) Right triangle

**25.** Which one has all the properties of a kite and a parallelogram?

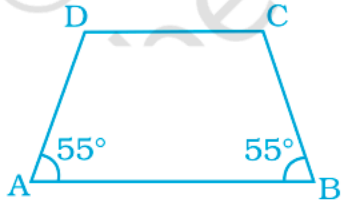
(a) Trapezium (b) Rhombus (c) Rectangle (d) Parallelogram

**26.** The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4. The smallest angle is

(a) 72° (b) 144° (c) 36° (d) 18°

**27.** In the trapezium ABCD, the measure of $\angle D$ is

(a) 55° (b) 115° (c) 135° (d) 125°




**28.** A quadrilateral has three acute angles. If each measures 80°, then the measure of the fourth angle is

(a) 150° (b) 120° (c) 105° (d) 140°

**29.** The number of sides of a regular polygon where each exterior angle has a measure of 45° is

(a) 8 (b) 10 (c) 4 (d) 6

**39.** The sum of angles of a concave quadrilateral is

(a) more than 360° (b) less than 360°

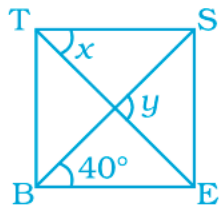
(c) equal to 360° (d) twice of 360°

**40.** Which of the following can never be the measure of exterior angle of a regular polygon?

(a) 22° (b) 36° (c) 45° (d) 30°

**41.** In the figure, BEST is a rhombus, Then the value of $y - x$ is

(a) 40° (b) 50° (c) 20° (d) 10°




**42.** The closed curve which is also a polygon is

(a)  (b)  (c)  (d) 

**43.** Which of the following is not true for an exterior angle of a regular polygon with $n$ sides?

(a) Each exterior angle = $\frac{360°}{n}$

(b) Exterior angle = 180° – interior angle

(c) $n = \frac{360°}{\text{exterior angle}}$

(d) Each exterior angle = $\frac{(n-2)\times 180°}{n}$

**44.** PQRS is a square. PR and SQ intersect at O. Then ∠POQ is a

(a) Right angle (b) Straight angle

(c) Reflex angle (d) Complete angle

**63.** A quadrilateral that is not a parallelogram but has exactly two opposite angles of equal measure is _____.

**64.** The measure of each angle of a regular pentagon is _____.

**65.** The name of three-sided regular polygon is _____.

**66.** The number of diagonals in a hexagon is _____.

**67.** A polygon is a simple closed curve made up of only _____.

**68.** A regular polygon is a polygon whose all sides are equal and all _____ are equal.

**69.** The sum of interior angles of a polygon of $n$ sides is _____right angles.

**70.** The sum of all exterior angles of a polygon is _____.

**71.** _____ is a regular quadrilateral.

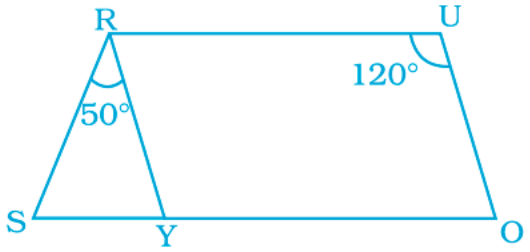
**72.** A quadrilateral in which a pair of opposite sides is parallel is _____.

**73.** If all sides of a quadrilateral are equal, it is a _____.

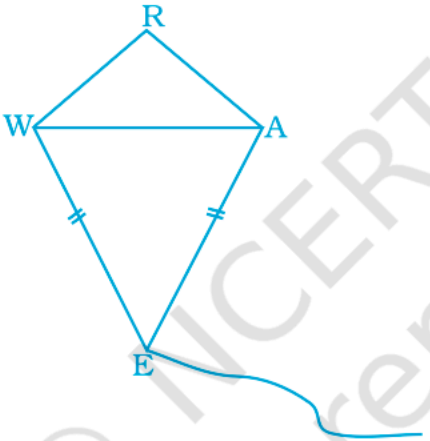
**74.** In a rhombus diagonals intersect at _____ angles.

**75.** _____ measurements can determine a quadrilateral uniquely.

**150.** In the given parallelogram YOUR, $\angle RUO = 120°$ and OY is extended to point S such that $\angle SRY = 50°$. Find $\angle YSR$.




**151.** In kite WEAR, $\angle WEA = 70°$ and $\angle ARW = 80°$. Find the remaining two angles.



**11.** Meenakshee cycles to her school at an average speed of 12 km/h and takes 20 minutes to reach her school. If she wants to reach her school in 12 minutes, her average speed should be

(a) $\frac{20}{3}$ km/h (b) 16 km/h

(c) 20 km/h (d) 15 km/h

**12.** 100 persons had food provision for 24 days. If 20 persons left the place, the provision will last for

(a) 30 days (b) $\frac{96}{5}$ days

(c) 120 days (d) 40 days

**13.** If two quantities $x$ and $y$ vary directly with each other, then

(a) $\frac{x}{y}$ remains constant. (b) $x - y$ remains constant.

(c) $x + y$ remains constant. (d) $x \times y$ remains constant.

**14.** If two quantities $p$ and $q$ vary inversely with each other, then

(a) $\frac{p}{q}$ remains constant. (b) $p + q$ remains constant.

(c) $p \times q$ remains constant. (d) $p - q$ remains constant.

**15.** If the distance travelled by a rickshaw in one hour is 10 km, then the distance travelled by the same rickshaw with the same speed in one minute is

(a) $\frac{250}{9}$ m (b) $\frac{500}{9}$ m (c) 1000 m (d) $\frac{500}{3}$ m

**39.** In case of inverse proportion, $\frac{a_2}{\_\_} = \frac{b_2}{\_\_}$

**40.** If the area occupied by 15 postal stamps is 60 $cm^2$, then the area occupied by 120 such postal stamps will be _____.

**41.** If 45 persons can complete a work in 20 days, then the time taken by 75 persons will be _____ hours.

**42.** Devangi travels 50 m distance in 75 steps, then the distance travelled in 375 steps is _____ km.

**In questions from 43 to 59, state whether the statements are true (T) or false (F).**

**43.** Two quantities $x$ and $y$ are said to vary directly with each other if for some rational number $k$, $xy = k$.

**44.** When the speed is kept fixed, time and distance vary inversely with each other.

**45.** When the distance is kept fixed, speed and time vary directly with each other.

**46.** Length of a side of a square and its area vary directly with each other.

**47.** Length of a side of an equilateral triangle and its perimeter vary inversely with each other.