

KENDRIYA VIDYALAYA
Annual Examination SAMPLE PAPER (2025-26)

Class : IX

Max. Marks : 80

Subject: MATHEMATICS

Time Allowed : 3 hr

GENERAL INSTRUCTIONS:-

- i) This question paper has five sections A-E.
- ii) Section A has 18 MCQ's and 2 ARQ's carrying 1 mark each.
- iii) Section B has 5 questions carrying 2 marks each.
- iv) Section C has 6 questions carrying 3 marks each.
- v) Section D has 4 question (5 marks) with sub parts
- vi) Section E has 3 question (4 marks) with sub parts

Section - A

Q1	The product of a rational and an irrational numbers is: (a) Always an integer (b) Always a rational number (c) Always an irrational number (d) Sometimes rational and sometimes irrational	1
Q2	Can we write 0 in the form of p/q? (a) YES (b) No	1
Q3	The decimal representation of the rational number i (a) Always terminating (b) Either terminating or repeating (c) Either terminating or non-repeating (d) Neither terminating nor repeating	1
Q4	Which of the following is an irrational number? (a) π (b) 0 (c) 1 (d) None of these	1
Q5	The coefficient of x^2 in $4x^3+7x^2-x+1$ is: (a) 1 (b) 7 (c) 3 (d) -1	1
Q6	A monomial of degree 20 in the following is: (a) $20x$ (b) 2 (c) x^{20} (d) x^2	1
Q7	Point (5,6) lies on the graph of the equation $6y = kx + 6$. The value of k is: (a) 5 (b) 3 (c) 6 (d) None of these	1
Q8	Number of quadrants of a Cartesian plane are (a) 2 (b) 4 (c) 8 (d) 6	1
Q9	The area of an equilateral triangle with side $2\sqrt{3}$ cm is (a) 5.196 cm^2 (b) 0.866 cm^2 (c) 3.496 cm^2 (d) 1.732 cm^2	1
Q10	Coordinate of origin are :- (a) (0,0) (b) (0,x) (c) (y,0) (d) (x,y)	1
Q11	If $x - 2$ is a factor of $5x^2 - kx - 18$, then find the value of k. (a) -1 (b) 1 (c) 0 (d) 5	1

Q12	$x = 3$ and $y = -2$ is a solution of the equation $4px - 3y = 12$, then the value of p is (a) 0 (b) 12 (c) 2 (d) 3	1
Q13	The things which are double of same thing are (a) equal (b) halves of same thing (c) unequal (d) double of the same thing	1
Q14	Each angle of an equilateral triangle is (a) 50° (b) 90° (c) 54° (d) 60°	1
Q15	The longest chord of the circle is: (a) Radius (b). Arc (c) Diameter (d) Segment	1
Q16	Three angles of a quadrilateral are 75° , 90° and 75° , the fourth angle is (a) 90° (b) 95° (c) 105° (d) 120°	1
Q17	If $\triangle ABC \cong \triangle PQR$ and $\triangle ABC$ is not congruent to $\triangle RPQ$, then which of the following is not true? (a) $BC = PQ$ (b) $AC = PR$ (c) $QR = BC$ (d) $AB = PQ$	1
Q18	The things which are double of same thing are (a) equal (b) halves of same thing (c) unequal (d) double of the same thing	1

In the following questions 19 and 20, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

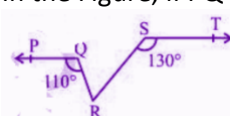
- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
 (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
 (c) Assertion (A) is true but reason (R) is false.
 (d) Assertion (A) is false but reason (R) is true.

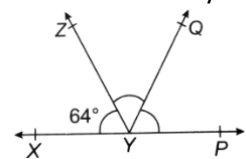
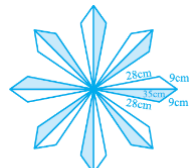
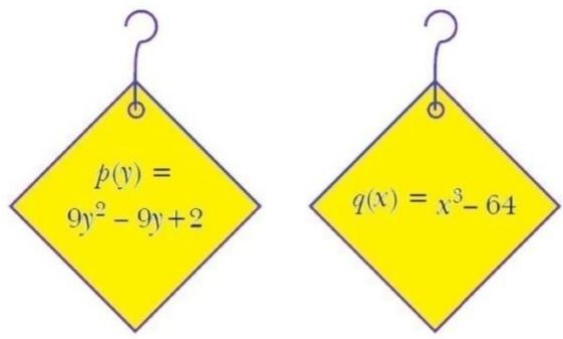
Q19	Assertion (A): If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 5 : 4, then the greater of the two angles is 100° . Reason (R): If a transversal intersects two parallel lines, then the sum of the interior angles on the same side of the transversal is 180° .	1
Q20	Assertion (A): The decimal value of $437/999$ is $0.437437....$ which is rational? Reason (R): A non terminating repeating decimal number is a rational number.	1

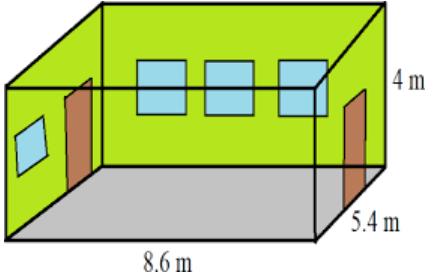
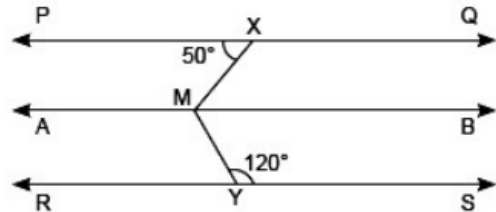
Section – B

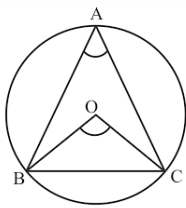
Q21	Find five rational numbers between 3 and 6 .	2
Q22	If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2} AB$. Explain by drawing the figure.	2
Q23	Without plotting the points indicate the quadrant in which they will lie, if (i) the ordinate is 7 and abscissa is -5 (ii) the abscissa is -6 and ordinate is -7	2
Q24	If the diagonal of parallelogram are equal then show that it is a rectangle.	2
Q25	A conical pit of top diameter 3.5m is 12m deep. What is the capacity in kiloliters? Without calculating the cube , find the value of $(-12)^3 + (7)^3 + (5)^3$	2

Section – C

Q26	In the Figure, if $PQ \parallel ST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$. 	3								
Q27	Rationalise the denominator of $\frac{1}{\sqrt{7} - \sqrt{6}}$	3								
Q28	Factorise: $4x^2 + 9y^2 + 16z^2 + 12xy - 24yz - 16xz$.	3								
Q29	100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows: <table data-bbox="201 1856 1362 1992"><tr><th>Number of letters</th><th>Number of surname</th></tr><tr><td>1-4</td><td>6</td></tr><tr><td>4-6</td><td>30</td></tr><tr><td>6-8</td><td>44</td></tr></table>	Number of letters	Number of surname	1-4	6	4-6	30	6-8	44	3
Number of letters	Number of surname									
1-4	6									
4-6	30									
6-8	44									

	8-12 12-20	16 4																	
	Draw a histogram to depict the given information.																		
Q30	Expand : $(x+2y-4z)^2$		3																
Q31	In a city, the weekly observations made in a study on the cost of living index are given in the following table: <table border="1"><thead><tr><th>Cost of living index</th><th>Number of weeks</th></tr></thead><tbody><tr><td>140-150</td><td>5</td></tr><tr><td>150-160</td><td>10</td></tr><tr><td>160-170</td><td>20</td></tr><tr><td>170-180</td><td>9</td></tr><tr><td>180-190</td><td>6</td></tr><tr><td>190-200</td><td>2</td></tr><tr><td>Total</td><td>52</td></tr></tbody></table> Draw a frequency polygon for the data above .		Cost of living index	Number of weeks	140-150	5	150-160	10	160-170	20	170-180	9	180-190	6	190-200	2	Total	52	3
Cost of living index	Number of weeks																		
140-150	5																		
150-160	10																		
160-170	20																		
170-180	9																		
180-190	6																		
190-200	2																		
Total	52																		
Section – D																			
Q32	It is given that $\angle XYZ = 64^\circ$ and XY is produced to point P. Draw a figure from the given information. If ray YQ bisects $\angle ZYP$, find $\angle XYQ$ and reflex $\angle QYP$. 		5																
Q33	A floral design on a floor is made up of 16 tiles which are triangular, the sides of the triangle being 9 cm, 28 cm and 35 cm (see Fig. 12.18). Find the cost of polishing the tiles at the rate of 50p per cm^2 .  Fig. 12.18		5																
Q34	A school organised a mathematics exhibition in the school premises. Children of all classes made various models and games to depict the use of mathematics in daily life. To make the decoration more attractive, they made hangings related to mathematics one of the students made two hangings with polynomials written on them.  (i) Find the factors of polynomial $q(x)$. (ii) Find the factors of polynomial $p(y)$. (iii) Find the zeroes of the polynomial $x^2 - 81$.		5																
Q35	An architect's planned design for a room with dimensions of 8.6 m, 5.4 m and 4 m respectively. He also planned to make 4 windows with blue colour and 2 doors with brown wood colour. The		5																

	room needs to be painted with Asian paint of Green colour except for the floor and square tiles were used for flooring as shown in the below figure:  (i) The total area of the four walls is ? (ii) What is the area of the tiles to be used for flooring? (iii) What is the volume of the air in the room?	
Section – E		
Q36	Two parallel roads PQ and RS are at the center of the city. It was decided to put two huge lamp posts at point X and Y and a statue of Mahatma Gandhi to be placed at point M with lots of palm trees to be planted along the line AB which is parallel to both PQ and RS. The area around M is to be decorated with flowering plants and greenery. The angle $\angle PXY$ is of 50° and angle $\angle MYS$ is of 120°  Based on the above information answer the following questions : (a) What is the measure of $\angle XMB$? (b) What is the measure of the angle $\angle YMB$? (c) What is the measure of the reflex angle $\angle XMY$? (d) What is ratio between the angles $\angle XMB$ and $\angle YMB$?	4
Q37	On his birthday, Manoj planned that this time he celebrates his birthday in a small orphanage centre. He bought apples to give to children and adults working there. Manoj donated 2 apples to each children and 3 apples to each adult working there along with Birthday cake. He distributed 60 total apples.  (a) Taking the number of children as 'x' and the number of adults as 'y'. Represent the above situation in linear equation in two variables. (b) If the number of children is 15, then find the number of adults. (c) If the number of adults is 12, then find the number of children. (d) If $x = -5$ and $y = 2$ is a solution of the equation $3x + 5y = b$, then find the value of 'b'	4
Q38	Government of India is working regularly for the uplistment of handicapped persons by making them self dependent. For this, three STD booths to be operated by handicapped persons were installed at A, B and C as shown in the figure. These three booths are equidistant from each other as shown in the figure.	4



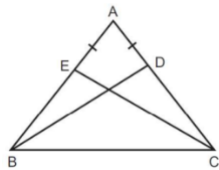
Based on the above information answer the following questions :

- Which type of $\triangle ABC$ is given in the figure?
- Measure of $\angle ABC$ is
- If $AB = 6$ cm, then value of $BC + CA$ is
- Measure of $\angle BOC$ is

Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c . $x - 2y - 20 = 0$

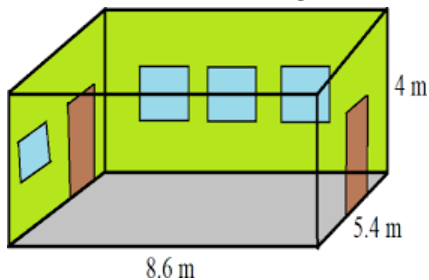
Prove that Two equal chords of a circle subtends equal angles at their centre.

ABC is an isosceles triangle with $AB = AC$ and BD and CE are its two medians. Show that $BD = CE$.



The sides of the Triangle are in the ratio 12:17:25. If the perimeter of triangle is 540cm then find the area of the triangle.

An architect's planned design for a room with dimensions of 8.6 m, 5.4 m and 4 m respectively. He also planned to make 4 windows with blue colour and 2 doors with brown wood colour. The room needs to be painted with Asian paint of Green colour except for the floor and square tiles were used for flooring as shown in the below figure:



- The total area of the four walls is : (a) 112 sq m (b) 212 sq m (c) 312 sq m (d) 412 sq m
- If the area of windows and doors is 22 sq m. The area of the walls to be painted (a) 100 sq m (a) 100 sq m (a) 100 sq m (d) 132 sq m
- What is the area of the tiles to be used for flooring? (a) 64.6 sq m (b) 46.44 sq m (c) 66.4 sq m (d) 44.6 sq m
- What is the volume of the air in the room?

SAMPLE QUESTION PAPER - 1

SUB- MATHEMATICS

CLASS-IX (SESSION 2025-26)

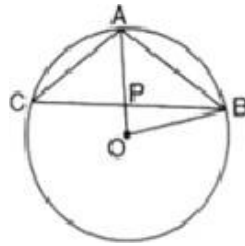
Time Allowed: 3 Hours Maximum Marks: 80 General Instructions:

- (i) This Question Paper has 5 Sections A-E.
- (ii) Section A has 20 MCQs carrying 1 mark each.
- (iii) Section B has 5 questions carrying 02 marks each.
- (iv) Section C has 6 questions carrying 03 marks each.
- (v) Section D has 4 questions carrying 05 marks each.
- (vi) Section E has 3 case based integrated units of assessment carrying 04 marks each.
- (vii) All Questions are compulsory, However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2 marks questions of Section E,
- (viii) Draw neat figures wherever required. Take —2217 wherever required if not stated.

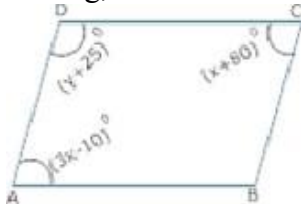
SECTION A

This section has 20 MCQ carrying 1 marks each

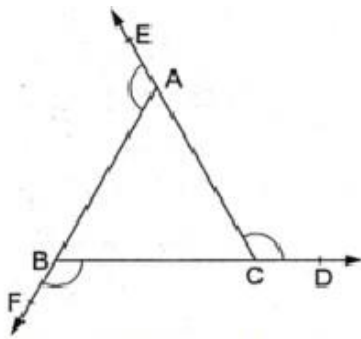
1. Ordinate of all points on the Y-axis is
 - a. any number
2. If the area of an isosceles right triangle is 8 cm^2 , what is the perimeter of the triangle?
 - a. $8+4\sqrt{2}\text{ cm}^2$
 - b. cm^2
 - c. $12\sqrt{2}\text{ cm}^2$
 - d. $4+8\sqrt{2}\text{ cm}^2$
3. In the given, AB is side of regular five sided polygon and AC is a side of a regular six sided polygon inscribed in the circle with centre O. AO and CB intersect at P, then $\angle APB$ is?
 - a. 90°
 - b. 72°
 - c. 86°
 - d. 96°



4. In the fig, ABCD is a Parallelogram- The values of x and y are



- a. $45^\circ, 300$
 - b. $300, 350$
 - c. $45^\circ, 45^\circ$
 - d. $55^\circ, 35^\circ$
5. The value of $\frac{1999}{1000}$ is 1.9999... in the form $\frac{p}{q}$, where 'p' and 'q' are integers and
 - a. $\frac{1999}{1000}$
 - b. $\frac{19}{10}$
6. The sides BC, CA and AB of $\triangle ABC$ have been produced to D, E and F respectively. $\angle BAE + \angle CBF + \angle ACD = ?$
 - a. 240°
 - b. 260°
 - c. 300°
 - d. 320°



7. Cost of a notebook is twice the cost of a pen. The equation to represent this statement is

d. $x + 2y = 0$

a. $\frac{1}{3}x = 3y$ d. $\frac{1}{43}x = 13y$

(C)

8. The cost of a notebook is twice the cost of a pen. The equation

a. $2x = 3y$ b. $x = 3y$ c. $x + 2y = 0$

9. The zeros of the polynomial $p(x) = 3x^2 - 1$ are

a. $\frac{1}{3}$ & 3 b. $\frac{1}{\sqrt{3}}$ & $-\frac{1}{\sqrt{3}}$ c. $-\frac{1}{\sqrt{3}}$ & $\frac{1}{\sqrt{3}}$

10. The value of $(x^{a-b})^{a+b} \times (x^{b-c})^{b+c} \times (x^{c-a})^{c+a}$ is

10. If a diagonal AC and BD of a quadrilateral ABCD bisect each other, then ABCD is a a, Parallelogram b. Rhombus c. Rectangle d, Triangle

11. The value of 3

a. $0.2 + 0.1$ c. $\frac{1}{3} + \frac{1}{2}$

d. $\frac{1}{3} + \frac{1}{2}$

12. $x = 2, y = 5$ is a solution of the linear equation

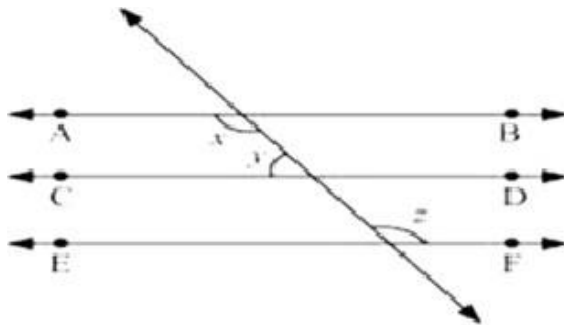
a. $5x + y = 7$

c. $5x + 2y = 7$

d. $x + 2y = 7$

13. In the given figure, AB || CD, CD || EF and $y : z = 3 : 7$, then $x = ?$

a. 63° c. 108° b. 126° d. 162°



14. If $x = \frac{1}{5} + \frac{1}{2}$, then $x - \frac{1}{x}$ equals

b. 4

c. $2\sqrt{5}$

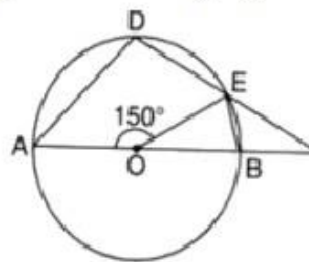
d. $\sqrt{5}$

15. AOB is the diameter of the circle.

If $\angle AOE = 150^\circ$, then the measure of $\angle CBE$ is

a. 15° c. 120°

b. 105° d. 105°



a. 1159

b. 1250

16. A point of the form (O, b) lies

on:

a. X axis

b. quadrant I

c. quadrant III

d. Y-axis

17. If a linear equation has solutions (2, 0), (0, 0) and (2, 0), then it is of the form:

a. $x + y = 0$ b. $-2x + y = 0$

18. The maximum number of zeroes that a polynomial of degree 3 can have is **d. $-x + 2y = 0$**
19. Assertion In ABC, E and F are the midpoints Of AC and AB respectively,
The altitude AP at BC intersects FE at Q. Then, AQ = QP.
Reason Q is the midpoint of AP.

- a, Both A and R are true and R is the correct explanation of A. b,
Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false. A is true but R is false.
d. A is false but R is true.

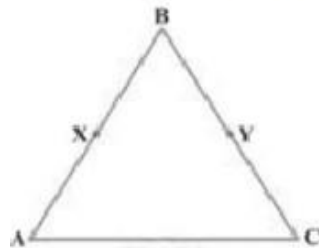
20. Assertion (A): $5 - \sqrt{2} = 5 - 1.414 = 3.586$ is an irrational number-

- Reason The difference of a rational number and an irrational number is an irrational number, a.
Both A and R are true and R is the correct explanation of A.
b. Both A and R are true but R is not the correct explanation of A.
c. A is true but R is false. A is true but R is false.
d. A is false but R is true,

SECTION B

21. Point C is called a mid point of line segment AB, prove that every line segment has One and only One mid-point.

22. In the given figure, we have $BX = \frac{1}{2} AB$ and $BY = \frac{1}{2} BC$. Show that $BX = BY$.



23. Name the quadrant in which the point lies (i) $(1, 1)$ (ii) $(-2, -4)$ (iii) $(-2, -2)$.

24. Find two rational and two irrational numbers between 0.5 and 0.55

OR

Express the decimal 0.235 in the form $\frac{p}{q}$ where p, q are integers and q $\neq 0$.

25. Curved surface area of a cone is 308 cm^2 and its slant height is 14 cm. Find the radius of the base.

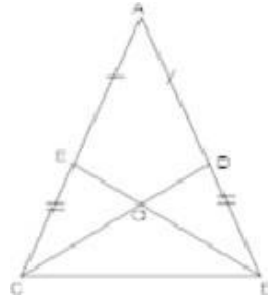
OR

If the radius and slant height of a cone are in the ratio 7 : 13 and its curved surface area is 286 cm^2 , find its radius.

SECTION C

26. Find the value of $\frac{1}{256} + \frac{1}{256} + \frac{2}{256}$

27. $AE = AD$ and $BD = CE$. Prove that $\triangle AEB \cong \triangle ADC$

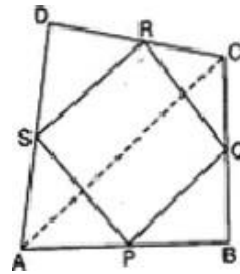


28. ABCD is a quadrilateral in which P, Q, R and S are mid points of the sides AB, BC, CD and DA. AC is a diagonal. Show that

i. $SR \parallel AC$ and $SR = \frac{1}{2}AC$

ii. $PQ \parallel SR$

iii. PQRS is a parallelogram.

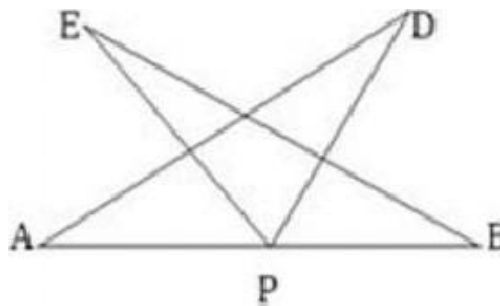


29. Find at least 3 solutions for the linear equation $2x + 3y + 7 = 0$.

30. AB is a line segment and P is the mid-point. D and E are points on the same side of AB such that $\angle EAP = \angle DAP$ and $\angle PEA = \angle PDB$. Show that:

e. $\triangle AEP \cong \triangle ADP$

f. $AE = AD$



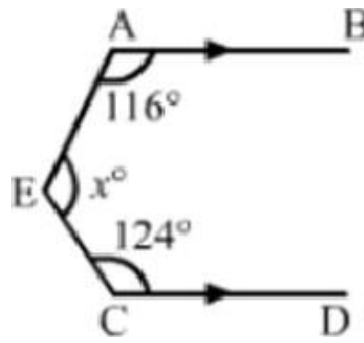
OR

ABC is an isosceles triangle in which $AB = AC$. BE and CF are its two medians. Show that $BE = CF$.

31. If $x + y + z = 0$, show that $x^3 + y^3 + z^3 = 3xyz$.

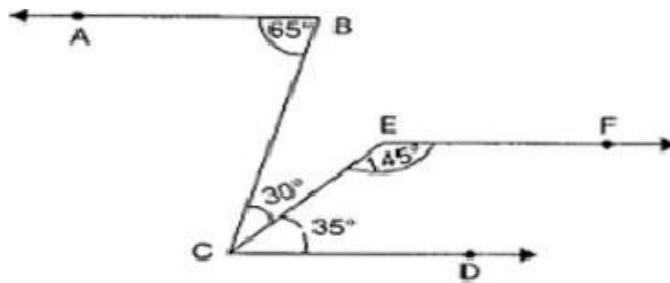
SECTION D

32. In each of the figures given below, $AB \parallel CD$, Find the value of x in each other case,



OR

In figure, $\angle ABC = 65^\circ$, $LBCE = 300$, $ZDCE = 35^\circ$ and $ZCFE = 145^\circ$. Prove that $AB \parallel EF$.



33. Prove that the line joining the mid-points of the diagonals of a trapezium is parallel to each of the parallel sides and is equal to half of the difference of these sides.
34. The perimeter of a triangular field is 420 m and its sides are in the ratio 6 : 7 : 8. Find the area of the triangular field.

OR

The perimeter of a right triangle is 24 cm. If its hypotenuse is 10 cm, find the other two sides. Find its area by using the formula area of a right triangle. Verify your result by using Heron's formula.

Factorize: $x^3 - 2x^2 - x + 2$

SECTION E

36. A bus stop is barricaded from the remaining part of the road, by using 50 hollow cones made of recycled cardboard. Each cone has a base diameter of 40 cm and a height of 1 m.

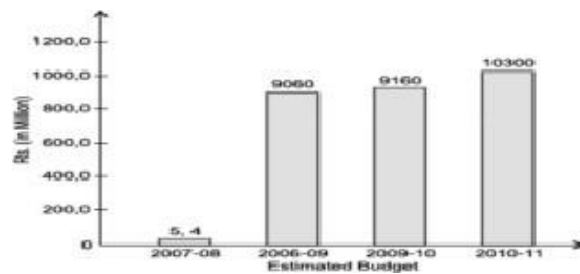


- I. Find the curved surface area of the cone.
- II. If the outer side of each of the cones is to be painted and the cost of painting is 12 per m^2 , what will be the cost of painting all these cones? (Use $\pi = 3.14$ and take $h = 1.02$)

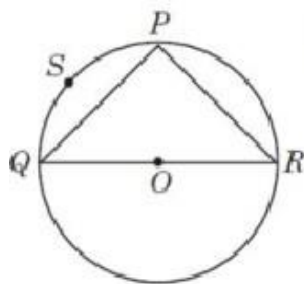
37. Ladli Scheme was launched by the Delhi Government in the year 2008. This scheme helps to make women strong and will empower a girl child. This scheme was started in 2008. The expenses for the scheme are plotted in the following bar chart.



- I. W What are the total expenses
- II. W What is the percentage of no of III. What is the percentage Of 2007-2011?
- What is the difference of expenses



38. Sanjay and his mother visited in mall. in the figure from where them 2009 to 2011 ?
 have to shop P and Q is 8 m an expenses in 2009-10 over the expenses in 2010-11 ?
 between shop minimum expenses over the maximum expenses in the period



OR in 2010-11 and the expenses in 2006-09?

He observes that three shops are situated at P, Q, R as shown purchase things according to their need. Distance between P and R is 6 m.



- Considering O as the center of the
- Find the Measure of $\angle QPR$.
 - Find the radius of the circle.

- III, Find the Measure of $\angle ZQSR$. (2

OR

Find the area of $\triangle PQR$ - (2) :les(1)