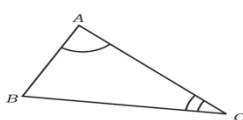
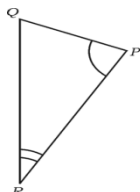


I. Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. 8X 1 = 8

- For any two positive integers, 'a' and 'b', H.C.F (a, b) $\times$ L.C.M (a, b) is equal to
A) (a + b) B) (a - b) C) (a $\times$ b) D) (a $\div$ b)
- The degree of a quadratic polynomial is,
A) 4 B) 1 C) 3 D) 2
- The sum of the zeroes of the polynomial $p(x) = x^2 - 2x - 8$ is,
A) -8 B) 2 C) -2 D) 8
- If the pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ have unique solution, then the correct relation among the following is,
A) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ C) $\frac{a_1}{a_2} = \frac{b_1}{b_2}$ D) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$
- The standard form of a quadratic equation $2x^2 = 3x - 5$ is,
A) $x^2 - x + 5 = 0$ B) $2x^2 + 3x - 5 = 0$ C) $2x^2 - 3x - 5 = 0$ D) $2x^2 - 3x + 5 = 0$
- If the nth term of an arithmetic progression is $5n + 3$, then the 3rd term of the progression is,
A) 11 B) 18 C) 12 D) 13
- In the figure, $\Delta PQR \sim \Delta ABC$. The pair of corresponding sides in the following is



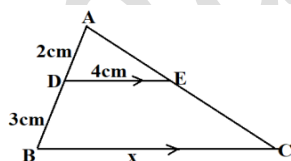
- (A) PQ and AB (B) PR and AB
(C) QR and AC (D) PR and BC

8. The distance of a point P (a, b) from the origin is

- A) $a^2 + b^2$ B) $\sqrt{a^2 - b^2}$ C) $\sqrt{a + b}$ D) $\sqrt{a^2 + b^2}$

II. Answer the following questions: 8 $\times$ 1 = 8

- Express 140 as the product of prime numbers.
- Find the maximum length of the rod which can measure the rods of length 24m and 36m exactly.
- How many solutions does the pair of linear equations in two variables have if the lines represented by them are coincident?
- Write the roots of the quadratic equation $x(x+2)=0$
- If 4, x, 28 are in arithmetic progression then find the value of x.
- State AAA criterion for similarity of triangles
- In the given figure, find the value of x.



16. Write the coordinates of the midpoint of the line segment joining the points A (x_1, y_1) and B(x_2, y_2).

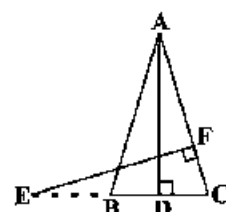
III. Answer the following questions: 8 $\times$ 2 = 16

- Prove that $2 + \sqrt{5}$ is an irrational number.
- Find the zeroes of the polynomial $P(x) = x^2 - 5x + 6$.
- Solve the given pair of linear equations by elimination method: $2x + y = 8$, $3x - y = 7$.
- Find the roots of the quadratic equation $x^2 + 8x + 12 = 0$

OR

Find the discriminant of the quadratic equation, $2x^2 - 5x + 3 = 0$ and write the nature of the roots.

- Find the 26th term of the arithmetic progression 5, 8, 11, using formula.
- Find the coordinates of the point which divides the line segment joining the points (1, 6) and (4, 3) in the ratio 1: 2 internally.
- Find the distance between the points P (5, 6) and Q (1, 3) using distance formula.
- In the figure, E is a point on side CB produced of an isosceles triangle ABC with $AB = AC$. If $AD \perp BC$ and $EF \perp AC$, Prove that $\Delta ABD \sim \Delta ECF$.



IV. Answer the following questions: $9 \times 3 = 27$

25. Prove that $\sqrt{3}$ is an irrational number.

26. Find the L.C.M and H.C.F of 12, 15 and 21 by prime factorization method.

OR

Find the H.C.F and L.C.M of 26 and 91 by the method of prime factorization and verify that L.C.M $\times$ H.C.F = The product of the numbers

27. Write the quadratic polynomial whose sum and product of the zeroes are 7 and 12 respectively and find the zeroes of this polynomial.

OR

Find the zeroes of the quadratic polynomial $p(x) = x^2 - 2x - 8$ and verify the relationship between the zeroes and the coefficients.

28. A fraction becomes $\frac{9}{11}$ when 2 is added to both numerator and denominator but when 3 is added to both numerator and denominator it becomes $\frac{5}{6}$. Find the fraction **OR**

Five years hence, the age of 'A' will be three times that of his son. Five years ago, 'A's age was seven times that of his son. Find their present ages.

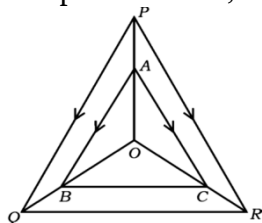
29. The sum of the squares of two consecutive odd positive integers is 290. Find the integers.

30. The sum of the 4th term and 8th term of an arithmetic progression is 24 and the sum of 6th term and 10th term of the progression is 44. Find the first three terms of the progression.

OR

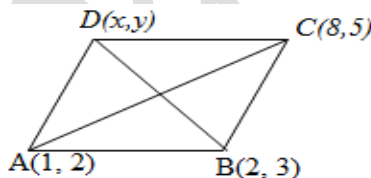
Find the arithmetic progression whose third term is 16 and its 7th term exceeds the 5th term by 12.

31. In the figure, A, B and C are points on OP, OQ and OR respectively such that $AB \parallel PQ$ and $AC \parallel PR$. Show that $BC \parallel QR$.



32. Find the coordinates of the point of trisection of the line segment joining the points (2, -2) and (-7, 4).

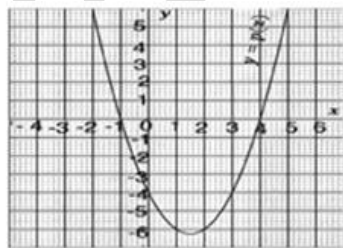
33. The coordinates of the three vertices of a parallelogram are A (1, 2), B (2, 3) and C (8, 5). Find the coordinates of the 4th vertex.



V. Answer the following questions: $4 \times 4 = 16$.

34. Solve the given pair of linear equations by graphical method. $x + 2y = 6$, $x + y = 2$

35. Find the quadratic polynomial represented in the graph. Verify the relationship between the zeroes and the coefficients.



36. An express train takes 1 hour less than a passenger train to travel 132 km between two towns A and B. The Average speed of the express train is 11km/h more than that of a passenger train. Find the Average speed of these trains. **OR**

The ages of two students 'A' and 'B' are 19 years and 15 years respectively. Find how many years it will take so that the product of their ages becomes equal to 480.

37. State and prove Basic Proportionality theorem.

VI. Answer the following question: $1 \times 5 = 5$

38. An arithmetic progression contains 30 terms. 17th term of the progression is 4 more than the thrice of its 5th term. The 10th term of the progression is 31. Find the last three terms of the progression and also find the progression.

***** All the Best*****