

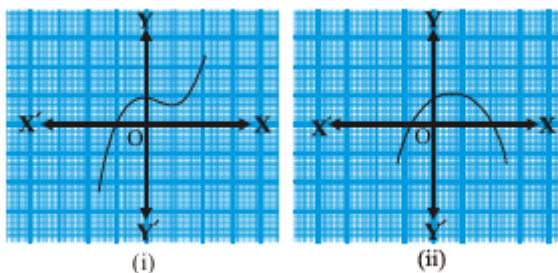
5. **Statement A** : All similar triangles are congruent. ()
Statement B: All right angled isosceles triangles are similar.
Which of the following is true?
A)only A is true B) only B is true
C)both A and B are true D) none
6. If $P(E) = 0.05$ then $P(\text{not } E) = \dots\dots\dots$
7. The zero of the polynomial $3x + 2$ is ()
(A) $-2/3$ (B) $2/3$ (C) $3/2$ (D) $-3/2$
8. If $x = \frac{1}{x}$ then roots are ()
(A) 1 (B) -1 (C) both 1 and -1 (D) none
9. The distance between origin and (7,4) is ()
(A).11 (B) 3 (C). $\sqrt{65}$ (D). $\sqrt{33}$
10. In mean formula , $\frac{x_i-a}{h}$ represents
11. Which is not central tendency measurement? ()
A)Range B) Mean C) Mode D) Median
12. Which one of the following cannot be the probability of an event? ()
A)0.7 B) $2/3$ C)-1.5 D) $4/5$

SECTION -2

Answer the following questions

8 x 2 = 16m

13. Find the HCF of 96 and 404 by the prime factorisation method. Hence, find their LCM.?
14. For each of the graphs, find the number of zeroes of $p(x)$.



15. On comparing the ratios $\frac{a_1}{a_2}$, $\frac{b_1}{b_2}$ and $\frac{c_1}{c_2}$, find out whether the lines representing the pairs of linear equations $5x - 4y + 8 = 0$ and $7x + 6y - 9 = 0$ intersect at a point, or parallel or coincident:
16. Represent the following situations mathematically:
The product of two consecutive positive integers is 306. We need to find the integers.
17. Which term of the AP : 3, 8, 13, 18, ... is 78?
18. Give two different examples of pair of (i) similar figures. (ii) non-similar figures.?
19. Find the coordinates of a point A, where AB is the diameter of a circle whose centre is (2, -3) and B is (1, 4).?
20. Write mode formula and explain each term in it?

SECTION - 3

Answer the following questions

8 x 4 = 32m

21. Explain why $7 \times 11 \times 13 + 13$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ are composite numbers.?
22. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2 respectively?
23. Solve $2x + 3y = 11$ and $2x - 4y = -24$ and hence find the value of 'm' for which $y = mx + 3$.?
24. Check whether the following are quadratic equations:
(i) $(x - 2)^2 + 1 = 2x - 3$ (ii) $x(2x + 3) = x^2 + 1$
25. How many two-digit numbers are divisible by 3?
26. A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.
27. Find the coordinates of the point which divides the join of (-1, 7) and (4, -3) in the ratio 2 : 3.?
28. Suppose we throw a die once. (i) What is the probability of getting a number greater than 4 ? (ii) What is the probability of getting a number less than or equal to 4 ?

SECTION - 4

Answer the following questions

5 x 8 = 40m

29. A) Prove that $\sqrt{2}$ is irrational.?

OR

B) Find the zeroes of the polynomial $p(x) = x^2 - 4x + 3$ and verify the relationship between the zeroes and coefficients?

30. A) Is it possible to design a rectangular mango grove whose length is twice its breadth, and the area is 800 m^2 ? If so, find its length and breadth.

OR

B) If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289, find the sum of first n terms.

31. A) State and prove Basic Proportionality Theorem ?

OR

B) Show that the points $(1, 7)$, $(4, 2)$, $(-1, -1)$ and $(-4, 4)$ are the vertices of a square.?

32. A) If the median of the distribution given below is 28.5, find the values of x and y .

Class interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	Total
Frequency	5	x	20	15	y	5	60

OR

B) Two dice, one blue and one grey, are thrown at the same time. Write down all the possible outcomes. What is the probability that the sum of the two numbers appearing on the top of the dice is (i) 8? (ii) 13? (iii) less than or equal to 12?

33. A) 5 pencils and 7 pens together cost 50, whereas 7 pencils and 5 pens together cost 46. Find the cost of one pencil and that of one pen. Form the pair of linear equations and find their solutions graphically.

OR

Check graphically whether the pair of equations $x + 3y = 6$ and $2x - 3y = 12$ is consistent. If so, solve them graphically ?