

24. If α and β are zeroes of polynomial $p(x) = x^2 - 5x + 6$, then find the value of $\alpha + \beta - 3\alpha\beta$.

25. Solve for $x = \frac{1}{x+1} + \frac{2}{x+2} = \frac{4}{x+4}$

26. If $\tan(A+B) = \sqrt{3}$ and $\tan(A-B) = \frac{1}{\sqrt{3}}$; $0^\circ < A+B \leq 90^\circ$, $A > B$, find A and B.

Section - C

8X3 = 24

Each questions carries 3 Marks.

27. Solve the pair of linear equations.

$$(a-b)x + (a+b)y = a^2 - 2ab - b^2$$

$$(a+b)(x+y) = a^2 + b^2$$

28. In an equilateral triangle ABC, D is a point on side BC such that $BD = \frac{1}{3} BC$. Prove that $9AD^2 = 7AB^2$.

29. Prove that $\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1} = \frac{1}{\sec \theta - \tan \theta}$

30. Obtain all other zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$

31. How many three digit numbers are divisible by 7?

32. If the areas of two similar triangles are equal, prove that they are congruent.

33. The angles of elevation of the top of a tower from two points at a distance of 4m and 9m from the base of the tower and in the same straight line with it are complementary. Find the height of the tower.

34. The diagonal of a rectangular field is 60m more than the shorter side. If the longer side is 30m more than the shorter side. Find the sides of the field.

Section D

Each questions carries 4 marks.

6X4 = 24

35. State and prove Pythagoras theorem.

36. If $\text{Cosec } A + \text{Cot } A = m$. Find the value of $\text{Cos } A$.

OR

If $9 \sin \theta + 40 \cos \theta = 41$. Find the value of $\text{Cosec } \theta$.

37. At the foot of a mountain, the Elevation of its summit is 45° . After ascending 1000m towards the mountain up a slope of 30° inclination, the Elevation is found to be 60° . Find the height of the mountain.

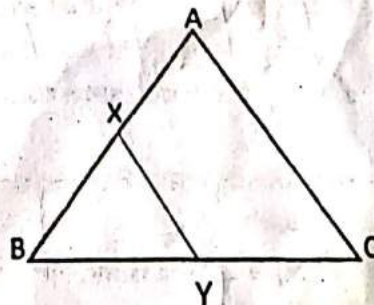
38. Draw the graphs of the Equations $5x - y = 5$ and $3x - y = 3$. Determine the coordinates of the vertices of the triangle formed by these lines and the y axis.

39. The sum of the third and the seventh terms of an AP is 6 and their product is 8. Find the sum of first sixteen terms of the AP.

40. If the polynomial $x^4 - 6x^3 + 16x^2 + 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to be $(x + a)$, find k and a.

OR

The line segment XY is parallel to side AC of ΔABC and it divides the triangle into two parts of equal areas. Find the ratio $\frac{AX}{AB}$



$a^2 - b^2 = (a+b)(a-b)$
 $a(m+y) - b(n-y)$

$a^2 - b^2 = (a+b)(a-b)$
 $(a-h) + y(a+h)$
 $(n-y)(a-h) =$

101
102
103
104
105
112
998
997
996
995
994