

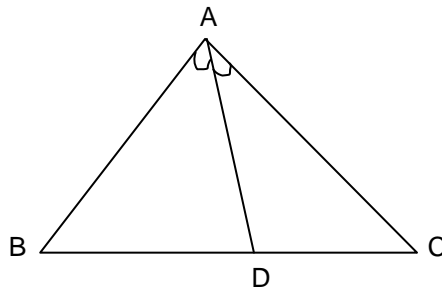
ASSIGNMENT

SECTION-A

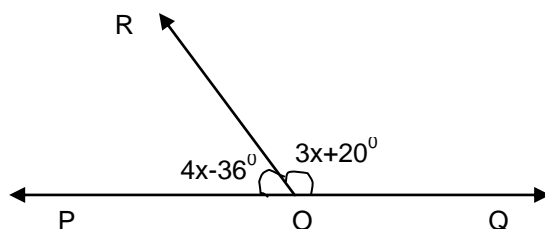
- Q1. The quotient obtained when $\sqrt{1500}$ is divided by $2\sqrt{15}$ is:
- Q2. The zeroes of the polynomial $p(x) = x(x-2)(x-3)$ are:
- Q3. The degree of the polynomial $3x^3 + 0x^4 + 8$ is:
- Q4. The coefficient of x^2 in $(2-3x^2)(x^2-5)$ is :
- Q5. Angles of a triangle are in the ratio 3:4:5, the largest angle of the triangle is:

SECTION-B

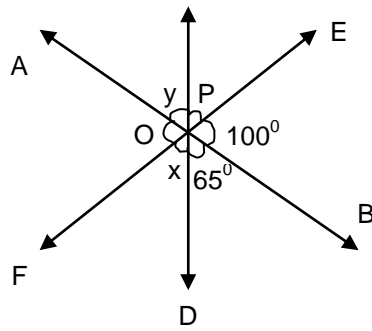
- Q6. If $a = 2$ and $b = 3$, then find the value of $a^b + b^a$.
- Q7. Factorise : $64x^3 + \sqrt{125}y^3$.
- Q8. Expand using a suitable identity: $(2x - 3y + z)^2$.
- Q9. In $\triangle ABC$, $\angle A + \angle B = 65^\circ$ and $\angle B + \angle C = 140^\circ$. Find the value of $\angle B$ and $\angle C$.
- Q10. In $\triangle ABC$, $\angle B = 45^\circ$, $\angle C = 55^\circ$, AD bisects $\angle A$. Find $\angle ADB$ and $\angle ADC$.



- Q11. The base of an isosceles triangle is 10cm and one of its equal sides is 13 cm. Find its area.
- Q12. Find two irrational numbers between $\frac{1}{3}$ and $\frac{1}{2}$.
- Q13. Factorise : $x^4y^4 - 256z^4$.
- Q14. Without calculating the cubes, find the value of $(-11)^3 + (8)^3 + (3)^3$.
- Q15. In the given figure, what value of x will make POQ a straight line?



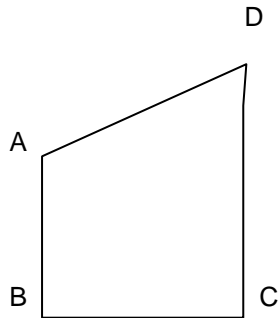
- Q16. In the given figure, lines AB, CD and EF intersect at O. Find x and y .



Q17. Find the area of a parallelogram whose sides are 13cm and 14 cm and diagonal is 15 cm.

SECTION-C

Q18. AB and CD are respectively the smallest and longest sides of a quadrilateral ABCD. Show that $\angle A > \angle C$ and $\angle B > \angle D$.



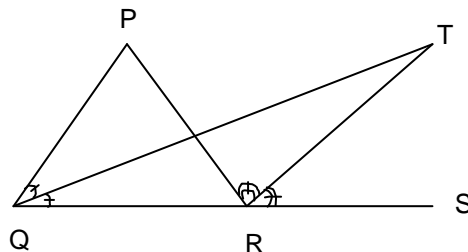
Q19. Represent $\sqrt{5.4}$ geometrically.

Q20. Simplify: $(a + 2b + 3c)^2 - (a - 2b + 3c)^2 - 6b^2 - 9bc$.

Q21. Find the zeroes of the polynomial $2x^3 + 5x^2 + 2x$.

Q22. If a side of a triangle is produced, the exterior angle so formed is equal to sum of the interior opposite angles. Prove it.

Q23. In the given figure, the QR of a triangle PQR is produced to a point S. If the bisectors of $\angle PQR$ and $\angle PRS$ meet at a point T, prove that $\angle QTR = \frac{1}{2} \angle QPR$.



Q24. The median of the following observations arranged in ascending order is 24. Find the value of x. 11, 12, 14, 18, x+2, x+4, 30, 32, 35, 41.

Q25. Draw the graph of the linear equation, $2x + 3y = 12$. At what points, the graph of the equation cuts the x-axis and the y-axis?

Q26. Draw the graph of two lines, whose equations are $3x - 2y + 6 = 0$ and $x + 2y - 6 = 0$ on the same graph paper. Find the area of triangle formed by the two lines and x-axis.

Q27. If the point (3,4) lies on the graph of the equation, $2y = ax + 6$, find whether (6, 5) also lies on the same graph.

Q28. Find the mean of the following data by 'Short-cut Method'.

Marks	20	22	25	30	35	39	45	50	Total
Frequency	4	6	8	10	8	7	5	2	50

Q29. Find the mean \bar{X} of the first eight even natural numbers. Also, verify that $\sum_{i=1}^8 (xi - \bar{X}) = 0$.

SECTION-D

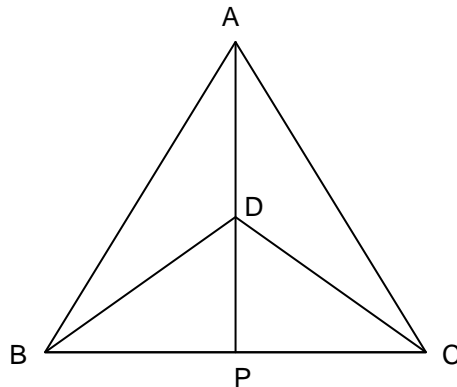
Q30. Find the values of a and b so that the polynomial $x^3 + 10x^2 + ax + b$ is exactly divisible by $(x-1)$ and $(x+2)$.

Q31. Find the value of $8x^3 + 27y^3$. if $2x + 3y = 8$ and $xy = 2$.

Q32. Factorise : $x^4 + 2x^3y - 2xy^3 - y^4$.

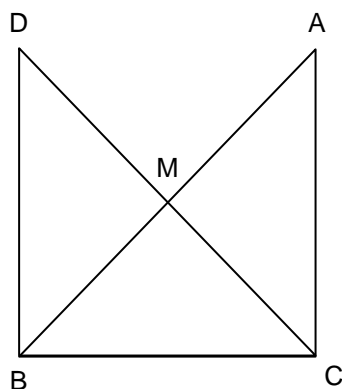
Q33. The line joining the mid –points of two sides of a triangle is parallel to third side.

Q34. In the given figure, ABC and DBC are two isosceles triangles on the same base BC and vertices A and D are on the same side of base BC. If AD is produced to intersect BC at P, show that AP is the perpendicular bisector of BC.

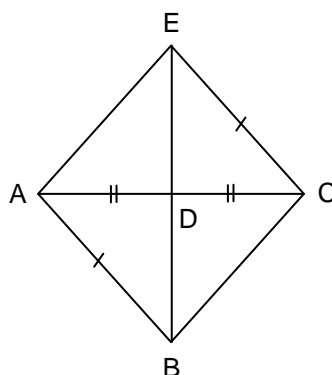


Q35. In the given figure, ABC is a right angled triangle, right angled at C, M is the mid-point of hypotenuse AB. C is joined to M and produced to a point D such that $DM = CM$. D is joined to B.

Prove that $CM = \frac{1}{2} AB$.



Q36. In the given figure, $AB = BC$ and $AD = CD$. Prove that $\angle ADE$ is a right angle and AE and EC are equal.



Q37. Prove that angles opposite to equal sides of an isosceles triangle are equal.

Q38. Following table gives the distribution of the marks obtained by the students of a class.

Marks	0-15	15-30	30-45	45-60	60-75	75-90
Number of Students	5	12	28	30	35	13

Represent the data by a frequency polygon.

Q39. ABCD is a Rhombus and P,Q,R and S are the mid points of the sides AB, BC , CD and DA respectively. Show that the quadrilateral PQRS is a rectangle.