

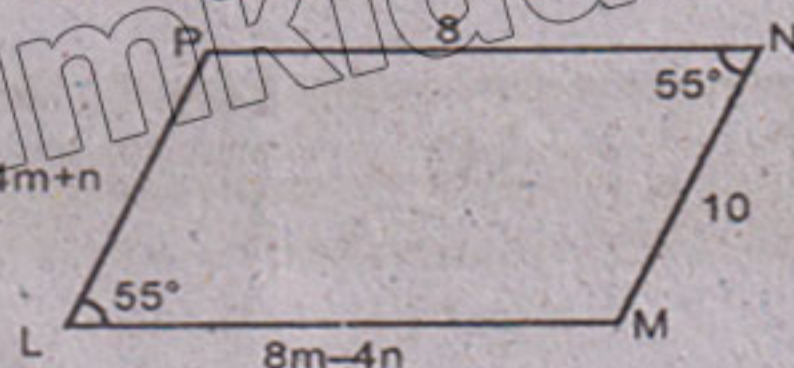
SECTION-I

2. Write short answers to any SIX (6) questions. (12)

- i Define square matrix.
- ii If $A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$, then verify that $(A^t)^t = A$
- iii Simplify: $\sqrt[4]{81y^{-12}x^{-8}}$
- iv Simplify $(\sqrt{5} - 3i)^2$ and write answer in the form of $a+bi$.
- v Evaluate $\log^2 \frac{1}{128}$
- vi Calculate $\log_3^2 \times \log_2 81$
- vii Simplify $2(6\sqrt{5} - 3\sqrt{5})$
- viii Express $\frac{3}{4} \sqrt[3]{128}$ in the simplest form.
- ix Factorize $3x^2 - 75y^2$

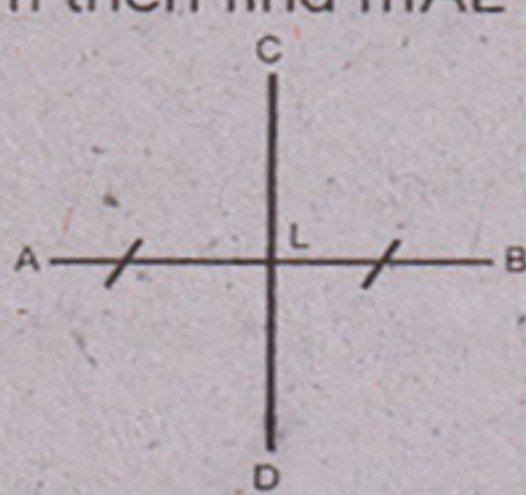
3. Write short answers to any SIX (6) questions. (12)

- i Find HCF of the following by factorization:
 $x^2 + 5x + 6, x^2 - 4x - 12$.
- ii Solve the equation $\frac{2}{3}x - \frac{1}{2}x = x + \frac{1}{6}$.
- iii Define absolute value.
- iv Find the value of 'm' and 'c' of the following lines by expressing them in the form of $y = mx + c$.
 $2x + 3y - 1 = 0$.
- v Define abscissa and ordinate.
- vi Find mid-point of $A(-8, 1)$ and $B(6, 1)$.
- vii Define isosceles triangle.
- viii States S.A.S postulate.
- ix If LMNP is parallelogram find the values of 'm' and 'n'.

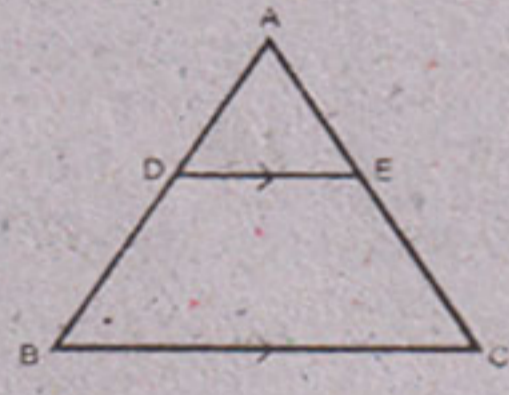


4. Write short answers to any SIX (6) questions. (12)

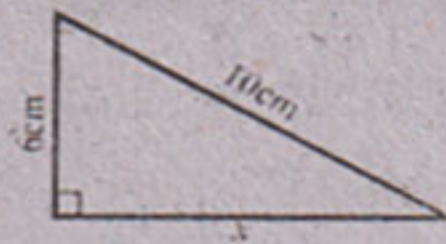
- i In given diagram \overline{CD} is right bisector of the line segment \overline{AB} . If $m\overline{AB} = 6\text{cm}$ then find $m\overline{AL}$ and $m\overline{LB}$.



- ii If two angles of a triangle are 90° and 60° then what will be the value of third angle?
- iii In $\triangle ABC$, $DE \parallel BC$ if $\frac{m\overline{AD}}{m\overline{DB}} = \frac{3}{5}$ and $m\overline{AC} = 4.8\text{cm}$, find $m\overline{AE}$.



- iv Define ratio.
- v Find the value of x in the given triangle.



- vi Define interior of a triangle.
- vii Define area of a figure.
- viii Construct a right angled isosceles triangle whose hypotenuse is 5.2cm long.
- ix Construct a triangle ABC in which $m\overline{AB} = 3.2\text{cm}$, $m\overline{BC} = 4.2\text{cm}$ and $m\overline{CA} = 5.2\text{cm}$.

SECTION-II

Note: Attempt any three questions. (24)

- 5.(a) Solve by using the matrix inversion method:
 $3x - 4y = 4$
 $x + 2y = 8$ (4)

- (b) Simplify $\sqrt{\frac{(216)^3 \times (25)^4}{(0.04)^3}}$ (4)

- 6.(a) Use logarithm to find the value of $\frac{(438)^3 \times \sqrt{0.056}}{(388)^4}$ (4)

- (b) If $x + y = 7$ and $xy = 12$, then find the value of $x^3 + y^3$. (4)

- 7.(a) For what value of 'm' is the polynomial $P(x) = 4x^3 - 7x^2 + 6x - 3m$ exactly divisible by $(x + 2)$. (4)

- (b) Find the value of 'c' and 'm' for which of the following expression will become perfect square (4)
 $49x^4 - 70x^3 + 109x^2 + cx - m$

- 8.(a) Solve for x $|x + 2| - 3 = 5 - |x + 2|$. (4)

- (b) Construct the triangle ABC. Draw the bisectors of its angles and verify their concurrency. (4)
 $m\overline{AB} = 4.2\text{cm}$, $m\overline{BC} = 6\text{cm}$, $m\overline{CA} = 5.2\text{cm}$.

- 9. Prove that any point on the right bisector of a line segment is equidistant from its end points.

OR Prove that triangles on equal bases and of equal altitudes are equal in area.