

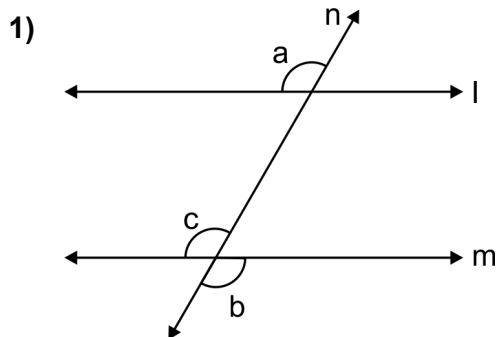
Chapter: 1 to 5

Q.1 (A) For every subquestion 4 alternative answers are given. Choose the correct answer and write the alphabet of it : (4)

- 1) If $P - Q - R$ and $d(P,Q) = 2$, $d(P,R) = 10$ then find $d(Q,R)$.
a. 12 b. 8 c. $\sqrt{96}$ d. 20
- 2) Triangles can be constructed if is given.
a. Dimensions of all the three sides
b. Dimension of base and two adjacent angles
c. Dimension of two sides and included angle
d. All of the above
- 3) Perimeter of triangle formed by joining the mid points of a triangle is of the perimeter of main triangle.
a. Same b. Double c. Half d. Triple
- 4) If the measure of angles of a triangle are in the ratio 3:4:5, what is the measure of smallest angle of triangle.
a. 25° b. 30° c. 45° d. 60°

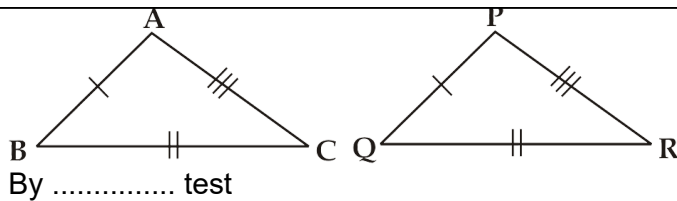
(B) Solve the following questions.

(4)



In the adjoining figure $\angle a \cong \angle b$ then prove that line $l \parallel$ line m .

- 2) State with reasons whether the following statement is true or false. Every square is a rectangle.
- 3) In example given below, a pair of triangles is shown. Equal parts of triangles in each pair are marked with the same sign.
Observe the figures and state the test by which the triangles in each pair are congruent.



$$\triangle ABC \cong \triangle PQR$$

- 4) Co-ordinates of some pair of point is given below. Hence find the distance between each pair.
- 4, 5

Q.2 (A) Complete and write the following Activities. (any two)

(4)

- 1) If $AB = 5$ cm, $BP = 2$ cm and $AP = 3.4$ cm, compare the segments.

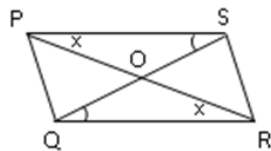
$$AB = 5 \text{ cm}, BP = 2 \text{ cm}, AP = 3.4 \text{ cm}$$

$$5 \text{ } \underline{\hspace{1cm}} \text{ } 3.4 \text{ } \underline{\hspace{1cm}} \text{ } 2$$

$$\therefore \text{ } \underline{\hspace{1cm}} > l(AP) > \underline{\hspace{1cm}}$$

- 2) Prove that: Diagonals of a parallelogram bisect each other.

Given: $\square PQRS$ is a parallelogram. Diagonals PR and QS intersect in point O .



To Prove: $\text{seg } PO \cong \text{seg } RO$,

$$\text{seg } SO \cong \text{seg } QO.$$

Proof: In $\triangle POS$ and $\triangle ROQ$

$$\angle OPS \cong \angle ORQ \quad \dots \underline{\hspace{1cm}}$$

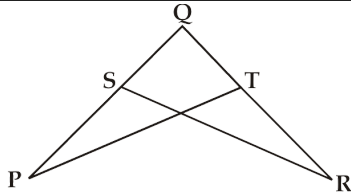
$$\underline{\hspace{1cm}} \quad \dots \text{ opposite sides of parallelogram}$$

$$\underline{\hspace{1cm}} \quad \dots \text{ alternate angles}$$

$$\therefore \triangle POS \cong \triangle ROQ \quad \dots \underline{\hspace{1cm}}$$

$$\therefore \left. \begin{array}{l} \text{seg } PO \cong \text{seg } RO \\ \text{and seg } SO \cong \text{seg } QO \end{array} \right\} \dots \text{Corresponding sides of congruent triangles.}$$

3)



In figure, $\angle P \cong \angle R$, $\text{seg PQ} \cong \text{seg RQ}$.

Prove that, $\triangle PQT \cong \triangle RQS$

In $\triangle PQT$ & $\triangle RQS$

$\angle P \cong$ _____ ... (Given)

_____ \cong seg RQ ... (Given)

$\angle Q \cong \angle Q$... (_____)

$\therefore \triangle PQT \cong \triangle RQS$... (_____)

(B) Solve the following sub-questions. (any four)

(8)

1) Draw a labelled figure showing information in each of the following statements and write the antecedent and the consequent.

Two equilateral triangles are similar.

2) If the co-ordinate of A is x and that of B is y, find d(A,B)

i. $x = 1, y = 7$

ii. $x = 6, y = -2$

3)

$\square PQRS$ is a parallelogram. $PQ = 3.5$, $PS = 5.3$ $\angle Q = 50^\circ$ then find the lengths of remaining sides and measures of remaining angles.

4) Prove that - The corresponding angles formed by a transversal of two parallel lines are of equal measure.

5)

In $\triangle PQR$, $\angle PQR = 90^\circ$, If $PQ = 7$, $QR = 4$ & QS is median of seg PR . Find QS .

Q.3 A) Complete the following activity. (Any one)

(3)

1) On a number line, co-ordinates of P, Q, R are 3, -5 and 6 respectively. State with reason whether the following statements are true or false.

$$d(P,Q) - d(P,R) = d(Q,R)$$

The co-ordinate of P is 3

The co-ordinate of Q is -5

The co-ordinate of R is 6

$$\begin{aligned}d(P,Q) &= 3 - (-5) \\ &= \underline{\hspace{2cm}} \quad \dots (i)\end{aligned}$$

$$\begin{aligned}d(Q,R) &= 6 - (-5) \\ &= 6 + 5 \\ &= \underline{\hspace{2cm}} \quad \dots (ii)\end{aligned}$$

$$\begin{aligned}d(P,R) &= 6 - 3 \\ &= \underline{\hspace{2cm}} \quad \dots (iii)\end{aligned}$$

$$\begin{aligned}d(P,Q) - d(P,R) &= 8 - 3 \\ &= \underline{\hspace{2cm}} \quad \dots (\underline{\hspace{2cm}})\end{aligned}$$

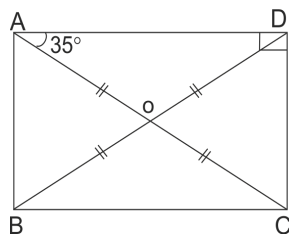
$$\begin{aligned}d(Q,R) &= 11 \text{ units} \quad \dots (\text{from ii})\end{aligned}$$

Hence, $d(P,Q) - d(Q,R)$ _____ $d(Q,R)$

2)

Diagonals of a rectangle ABCD intersect at point O. If $AC = 8$ cm, then find BO and if $\angle CAD$

$= 35^\circ$, then find $\angle ACB$.



Prism
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1) Diagonals of a rectangle are equal

$$\therefore AC = BD = 8\text{cm}$$

$$BO = \underline{\hspace{2cm}} \quad \dots [\text{Diagonals of a rectangle bisect each other}]$$

$$\therefore BO = \frac{1}{2} \times 8$$

$$BO = \underline{\hspace{2cm}}$$

2) $\angle A = 90^\circ$... [each angle of a rectangle is 90°]

$$\therefore \angle CAD + \angle CAB = \angle A \quad \dots [\text{Angle addition}]$$

$$\therefore \angle CAB + 35^\circ = 90^\circ \quad \dots [\text{given}]$$

$$\therefore \angle CAB = \underline{\hspace{2cm}}$$

3) In $\triangle ABC$,

$$\therefore \angle CAB + \angle B + \angle BCA = 180^\circ \quad \dots [\underline{\hspace{2cm}}]$$

$$\therefore 55^\circ + 90^\circ + \angle BCA = 180^\circ \quad \dots [\text{From 2 and each angle of rectangle is } 90^\circ]$$

$$\therefore \angle BCA = 180 - 145$$

$$\therefore \angle BCA = \underline{\hspace{2cm}}$$

$$BO = \underline{\hspace{2cm}}, \angle ACB = \underline{\hspace{2cm}}$$

B) Solve the following sub-questions. (Any two)

(6)

4)

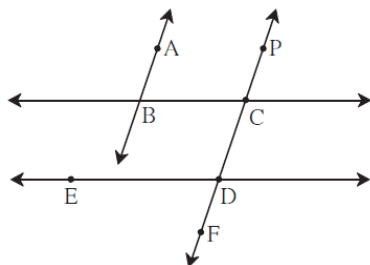
Measures of angles of $\square ABCD$ are in the ratio 4 : 5 : 7 : 8. Show that $\square ABCD$ is a trapezium.

2)

Construct $\triangle LMN$, such that $MN = 6.2$ cm, $\angle M = 50^\circ$, $LN - LM = 2.4$ cm.

3) Diagonals PR and QS of rhombus PQRS are 20 cm and 48 cm respectively. Find the length of side PQ.

4)



In the Adjoining figure line $AB \parallel$ line CF and line $BC \parallel$ line ED Prove that ; $\angle ABC \cong \angle FDE$

Q.4 Solve the following sub-questions. (Any two)

(8)

1) The co-ordinates of the points on the number line are as follows.

Points	P	Q	R	S	T
Co-ordinates	3	5	2	- 7	9

Find the lengths of: seg PQ, seg PR, seg PS, seg PT.

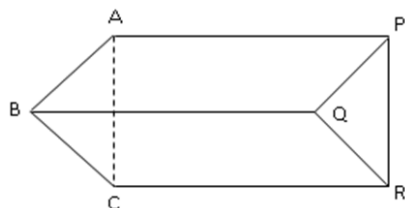
2)

Construct $\triangle ABC$, in which $\angle B = 70^\circ$, $\angle C = 60^\circ$, $AB + BC + AC = 11.2$ cm.

3)

In the adjoining figure, if seg $AB \parallel$ seg PQ , seg $AB \cong$ seg PQ , seg $AC \parallel$ seg PR , seg AC

\cong seg PR , then Prove that seg $BC \parallel$ seg QR and seg $BC \cong$ seg QR .



Q.5 Solve the following sub-questions. (Any one)

(3)

- 1) On a number line, co-ordinates of P, Q, R are 3, -5 and 6 respectively. State with reason whether the following statements are true or false.

$$d(R,P) + d(P,Q) = d(R,Q)$$

2)

In the adjoining figure, □ABCD is a trapezium. $AB \parallel DC$. Points M and N are midpoints of

diagonal AC and DB respectively then prove that $MN \parallel AB$.

