

Q.1 B) Solve the following subquestions.

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- 1) In ΔPQR , $m \angle P = 70^\circ$, $m \angle Q = 65^\circ$ then find $m \angle R$.
- 2) If $AB = 5$ cm, $BP = 2.5$ cm, $AP = 5.5$ cm. Compare the segments
- 3) Write the converse of "The diagonals of a rectangle are congruent."
- 4) Write alternate angle test.

Q.2 A) Complete the following activity. (Any two)

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- 1) If $X-Y-Z$ and $l(XY) = \sqrt{7}$, $l(XZ) = 3\sqrt{7}$ then find $l(YZ)$.

Activity : $l(XZ) = \square + l(YZ) \quad \square (X - Y - Z)$

$$\therefore \square = \sqrt{7} + l(YZ)$$

$$\therefore l(YZ) = \square - \sqrt{7}$$

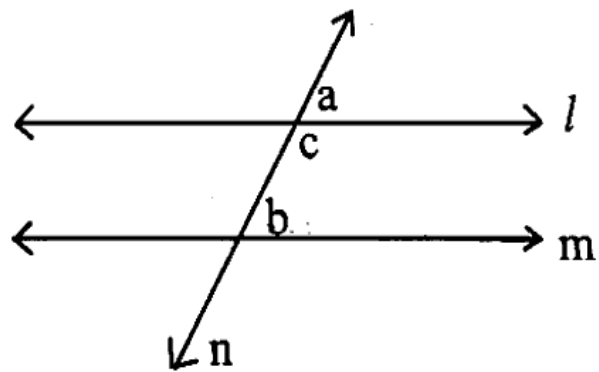
$$\therefore l(YZ) = \square$$

- 2) Prove that- The corresponding angles formed by transversal of two parallel lines are of equal measures.

Given: line $l \parallel$ line m

line n is a transversal

To prove: $\angle a \cong \square$



Proof: $\angle a + \angle c = 180^\circ$ — \square — equation (I)

$\angle b + \angle c = 180^\circ$ — \square — equation (II)

$\therefore \angle a + \cancel{\angle c} = \angle b + \cancel{\angle c}$ — from equ.(I) and equ.(II)

$\therefore \square = \angle b$ Hence proved.

Q.2 A)

3) The measures of angles of a triangle are in the ration 5:6:7. To find the measures complete the following activity.

Activity : $5x + 6x + \boxed{} = 180^\circ$ (Sum of all angles of a triangle)

$\therefore \boxed{} = 180^\circ$

$\therefore x = \boxed{}$

\therefore The measures of three angles of a triangle are $\boxed{, , }$

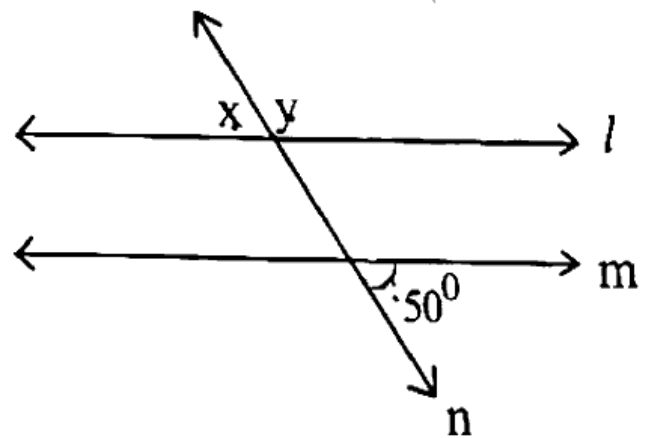
B) Solve any four sub questions.

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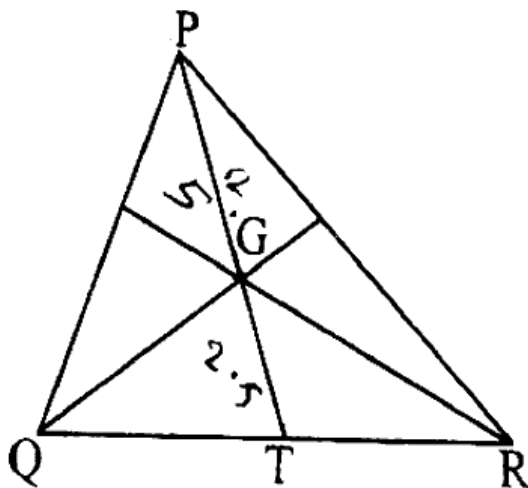
1) Write the following statement in conditional form :-

- a) Every square is a rhombus
- b) A triangle is a figure formed by three segments.

2) In the figure line $l \parallel$ line m and line n is their transversal. Find the value of x and y from the figure.



3)



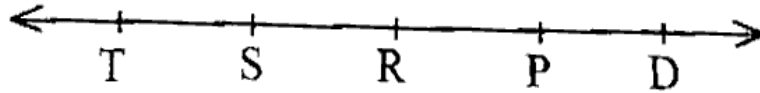
In ΔPQR , G is the point of concurrence of the medians of ΔPQR . If $GT = 2.5$ cm then find the lengths of PG and PT .

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Q.2 B)

4) Draw an equilateral triangle of each side 3 cm and draw its all three perpendicular bisectors.

5) Observe the figure and answer the following questions.



- a) Write the names of any one pair of the opposite ray.
- b) Write the intersection set of Ray PD and Ray RP.

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

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1) If measures of angles of a triangle are 45° , 45° , 90° then to prove length of each side containing the right angle is $\frac{1}{\sqrt{2}} \times$ hypotenuse. Complete following proof

proof: In ΔABC , $\angle B = \square^{\circ}$
 $\angle A = \angle C = \square$
 $\therefore BC = AB$

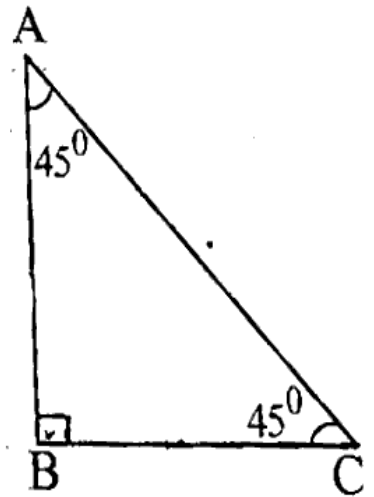
By Pythagoras theorem.

$$AB^2 + BC^2 = \square$$

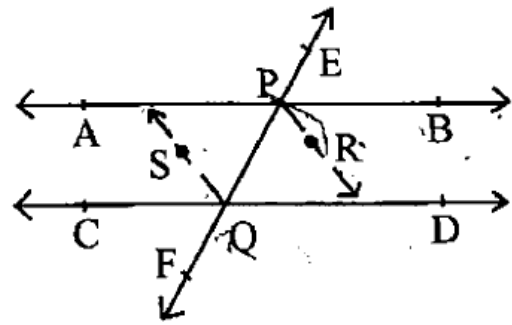
$$\therefore AB^2 + \square = AC^2 \quad (\because BC = AB)$$

$$\therefore 2AB^2 = \square, \quad \therefore AB^2 = \square$$

$$\therefore AB = \frac{1}{\sqrt{2}} AC \quad \text{(Taking square roots of both sides)}$$



Q.3 A) 2). Given: ray PR \parallel ray QS
 Ray PR and ray QS are angle bisectors of $\angle BPQ$ and $\angle PQC$ respectively.
 To prove: line AB \parallel line CD.



Proof: $\angle RPQ \cong \angle PQS$ equation (I)
 $\therefore \angle RPQ = \frac{1}{2}$ (Ray PR bisects $\angle BPQ$) equation (II)
 $\therefore \angle PQS = \frac{1}{2}$ (Ray QS bisects $\angle PQC$) equation (III)
 $\therefore \frac{1}{2} \angle BPQ = \frac{1}{2}$ (From equation (I), (II), (III))
 $\therefore \angle BPQ \cong \angle$
 \therefore line AB \parallel line CD () Hence proved.

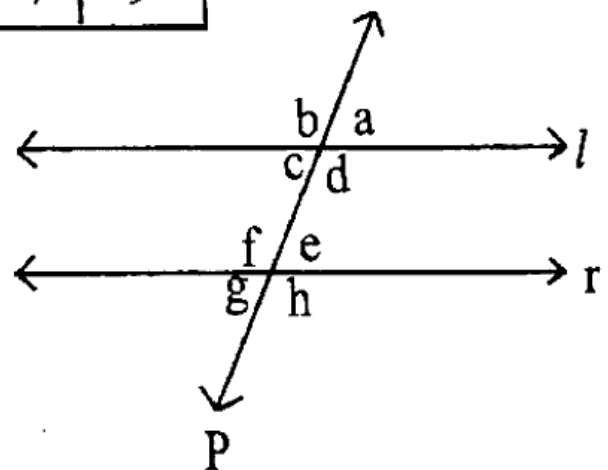
Q.3 B) Solve any two sub questions.

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- 1) Construct $\triangle ABC$ where $BC = 7$ cm, $m\angle ABC = 75^\circ$; $AB + BC = 9$ cm
- 2) Find the lengths of the following segments using coordinates given in the table below. i) Seg AB ii) Seg DE iii) Seg BE

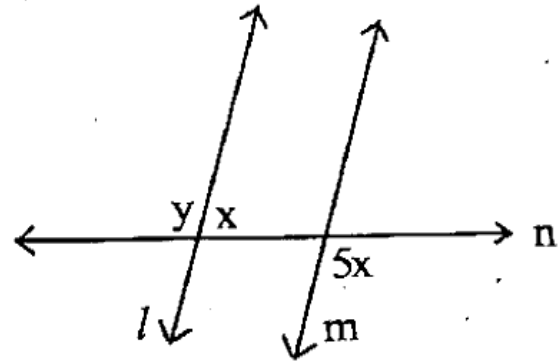
Point	A	B	C	D	E
coordinate	-3	5	2	-7	9

- 3) In the figure, if line $l \parallel$ line r .
 line P is their transversal and
 if $a = 80^\circ$ find the values of
 c, d, e, f, g, h .



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Q.3 B) 4) With the information in the figure,
line $l \parallel$ line m ,
then find the value of x and y .

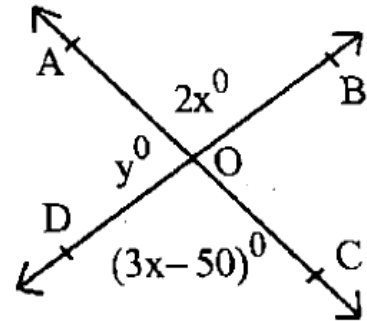


Q.4 Solve any two sub questions.

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1) Construct $\triangle LMN$ in which, $\angle M = 60^\circ$, $m \angle N = 80^\circ$ and $LM + MN + NL = 11\text{cm}$.

2) In the given figure, line AC and line BD intersect at point O .
 $\angle AOD = y^\circ$ and $\angle AOB = 2x^\circ$
 $\angle DOC = (3x - 50)^\circ$
then what is the value of y ?



3) In the $\triangle ABC$, D is the midpoint such that $BD = \frac{1}{2} AC$, show that $\triangle ABC$ is a right angle triangle.

(Write Given, to prove and proof with figure)

Q.5 Solve any one sub question. <https://www.maharashtrastudy.com>

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1) Prove that, 'The opposite angles formed by two intersecting lines are of equal measures.'

2) In the figure,
Seg $DB \perp$ ray AB ,
Seg $DC \perp$ ray AC ,
 $\angle BAD = 40^\circ$ then
find the measure of $\angle BDC$.

