SUCCESS KEY TEST SERIES

X (English)

(Worksheet -1 Math-2 (Ch-1,2))

Mathematics Part - II-

DATE:

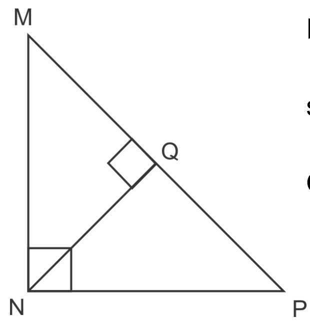
TIME: 1 Hour

MARKS: 20

SEAT NO:

2

Q.1 A Answer the following.

1 

In $\triangle MNP$, $\angle MNP = 90^0$,

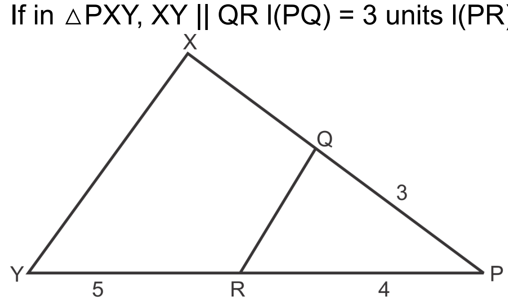
seg NQ $\perp$ seg MP, MQ = 9,

QP = 4, find NQ.

2 $\triangle ABC \sim \triangle PQR$. A($\triangle ABC$) : A ($\triangle PQR$) = 16 : 25. If BC = 2 cm, find QR.

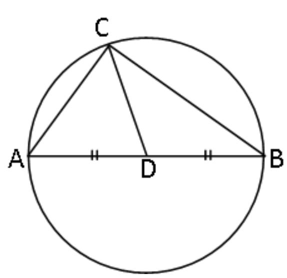
B Multiple Choice Questions **2**

1 If in $\triangle PXY$, XY || QR l(PQ) = 3 units l(PR) = 4 units, l(YR) = 5 units. Find l(PX).



a. 5.75 units b. 6.25 units c. 7 units d. 6.75 units

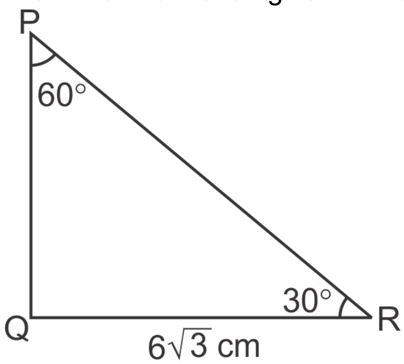
2 Find BC. if diameter of circle is 10 cm and AC = 6 cm



a. 7 cm b. 10 cm c. 9 cm d. 8 cm

Q.2 A Attempt the following (Any One) **2**

1 From the information given in the figure, find PR and PQ.



In $\triangle PQR$, $\angle Q = 90°$, $\angle P = 60°$, and $\angle R = 30°$.

By the theorem of 30° - 60° - 90° triangle,

QR = ______PR ... (Side opposite to 60°)

$\therefore$ $6\sqrt{3} = \dfrac{\sqrt{3}}{2}PR$

$\therefore$ $PR = 6\sqrt{3} \times \dfrac{2}{\sqrt{3}}$

$\therefore$ PR = ______ ... (1)

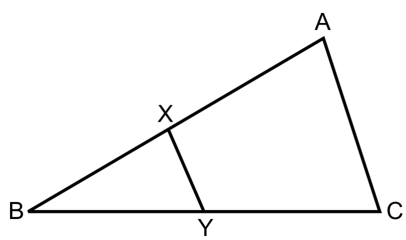
$PQ = \dfrac{1}{2}$ PR ... (______)

$\therefore$ $PQ = \dfrac{1}{2} \times 12$ cm ... (From (1))

$\therefore$ PQ = ______

PR = ______ ; PQ = ______

2



In figure XY || seg AC. If 2AX = 3BX and XY = 9. Complete the activity to find the value of AC.

2 AX = 3 BX $\therefore$ $\dfrac{AX}{BX} = \dfrac{\boxed{\ }}{\boxed{\ }}$

$\dfrac{AX + BX}{BX} = \dfrac{\boxed{\ } + \boxed{\ }}{\boxed{\ }}$ ... by componendo

$\dfrac{AB}{BX} = \dfrac{\boxed{\ }}{\boxed{\ }}$ ... (I)

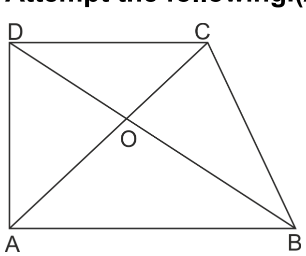
$\triangle BCA \sim \triangle BYX$ ... $\boxed{\ }$ test of similarity.

$\therefore$ $\dfrac{BA}{BX} = \dfrac{AC}{XY}$ ... corresponding sides of similar triangles.

$\therefore$ $\dfrac{\boxed{\ }}{\boxed{\ }} = \dfrac{AC}{9}$ $\therefore$ AC = $\boxed{\ }$ ... from (I)

B Attempt the following.(Any Two) **6**

1



In the given figure, ABCD is a trapezium in which AB $\parallel$ DC. If 2AB = 3DC, find the ratio of the areas of $\triangle$AOB and $\triangle$COD.

$\frac{AB}{DC}$ = _____

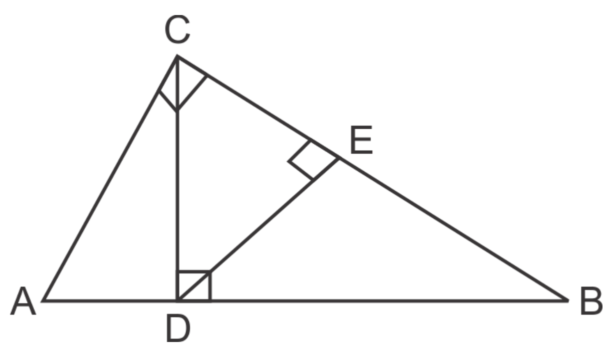
To find : area $\triangle$AOB : area of $\triangle$COD

Proof : In $\triangle$AOB and $\triangle$COD

	$\angle$AOB = $\angle$COD	_____
	$\angle$OAB = _____	(alternate angles)
$\therefore$	$\triangle$AOB ~ $\triangle$COD	_____
$\therefore$	$\frac{\text{area } \triangle AOB}{\text{area } \triangle COD}$ = _____ = $\frac{3^2}{2^2}$ = _____	

Ratio in the areas of $\triangle$AOB and $\triangle$COD_____

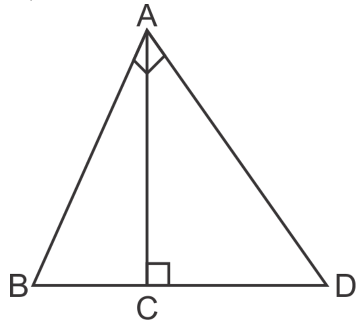
2 In $\triangle$ABC, $\angle$ACB = 90°, seg CD $\perp$seg AB.
seg DE $\perp$ seg CB.
Show that : $CD^2 \times AC = AD \times AB \times DE$



	In $\triangle$ABC,	
	$\angle$ACB = 90°	
	seg CD $\perp$ seg AB	... (Given)
$\therefore$	CD^2 = _____	... (1) (Geometric mean property)
	In $\triangle$DEB and $\triangle$ACB	
	$\angle$DEB $\cong$ $\angle$ACB	... (Each angle is 90°)
	$\angle$B $\cong$ $\angle$B	... _____
$\therefore$	$\triangle$DEB ~ $\triangle$ACB	... (A-A test of similarity)
$\therefore$	$\frac{DE}{AC}$ = _____	... (c.s.s.t)
$\therefore$	DE $\times$ AB = _____	
$\therefore$	AD $\times$ DE $\times$ AB = _____	(Multiplying both sides by AD)
	_____ = $CD^2 \times AC$	[from (1)]
	i.e. $CD^2 \times AC = AD \times AB \times DE$	

3 $\triangle$ABD is a triangle in which $\angle$A = 90° and seg AC $\perp$ seg BD
Show that
i) AB^2 = BC.BD

ii) $AD^2 = BD.CD$
iii) $AC^2 = BC.CD$



i) In $\triangle ABD$,
$\angle BAD = 90°$ ... (Given)
seg AC $\perp$ hypotenuse BD
$\therefore$ In $\triangle BCA \sim \triangle ACD \sim \triangle BAD$ ... (Similarity in Right-angled triangle)

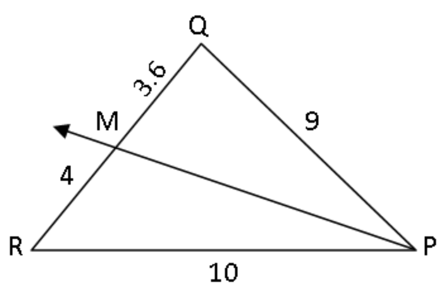
ii) $\triangle BCA \sim \triangle BAD$ ... (From (i))
$\therefore \dfrac{BC}{BA} =$ ______ ... (c.s.s.t)
$\therefore$ ______ $= BC.BD$

iii) $\triangle ACD \sim \triangle BAD$ ... (From (1))
$\therefore \dfrac{CD}{AD} =$ ______ ... (c.s.s.t)
$\therefore$ ______ $= BD.CD$

iv) $\triangle BCA \sim \triangle ACD$ ... (From (1))
$\therefore$ ______ $= \dfrac{AC}{DC}$ ... (c.s.s.t)
$\therefore AC^2 =$ ______

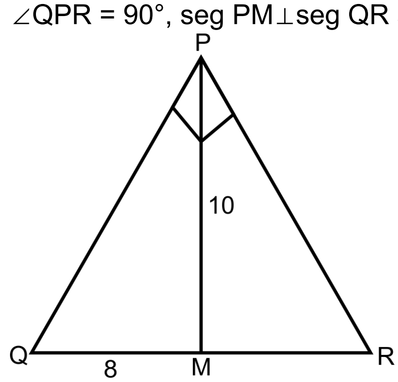
Q.3 Answer the following (Any Two) **4**

1

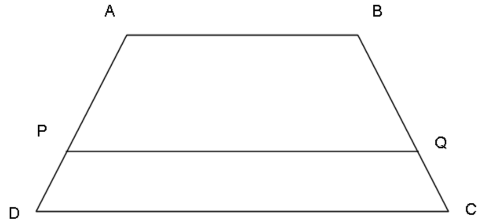


Given below is a triangle and lengths of its line segments. Identify in the figure if, ray PM is the bisector of $\angle$ QPR.

2 $\angle QPR = 90°$, seg PM$\perp$seg QR and Q-M-R, PM = 10, QM = 8, find QR.



3 In trapezium ABCD, side AB || side PQ || side DC, AP = 15, PD = 12, QC = 14, find BQ.



Q.4 Answer the following(Any One) **4**

1 Prove that :

"If a line parallel to a side of a triangle intersects the remaining sides in two distinct points, then the line divides the sides in the same proportion."

2 In the figure, □PQRV is a trapezium in which seg PQ || seg VR SR = 4 and PQ = 6

Find : VR