PRISM WORLD

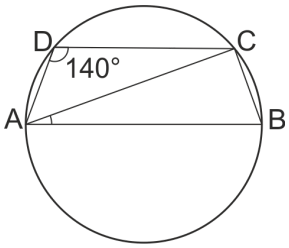
Std.: 10 (English) **Maths - II** **Marks: 20**

Date: **Time: 1 hrs**

Chapter: 1 to 3

Q.1 A) Choose the correct alternative. **(2)**

1)



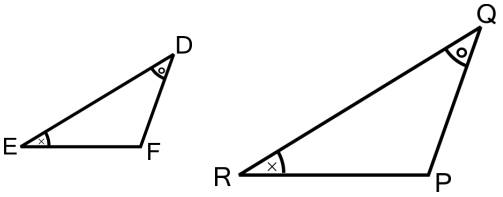
ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and $\angle$ ADC = 140^0 , then $\angle$BAC is equal to

a. 80^0 b. 50^0 c. 40^0 d.30^0

2)

If in $\triangle$DEF and $\triangle$PQR, $\angle D \cong \angle Q$, $\angle R \cong \angle E$ then which of the following statements is false?

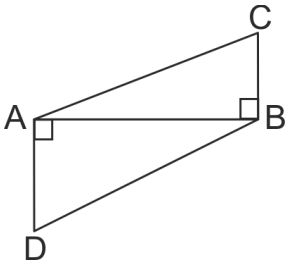
a. $\frac{EF}{PR} = \frac{DF}{PQ}$ b. $\frac{DE}{PQ} = \frac{EF}{RP}$ c. $\frac{DE}{QR} = \frac{DF}{PQ}$ d. $\frac{EF}{RP} = \frac{DE}{QR}$



B) Solve the following questions. (Any one) **(2)**

1)

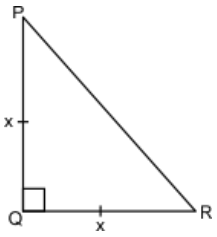
In the given figure, CB$\perp$AB, DA$\perp$AB. If BC = 4, AD = 8 then $\frac{A(\triangle ABC)}{A(\triangle ADB)}$ find.



2) Identify, with reason, if the following is Pythagorean triplet. 4, 9, 12

Q.2 A) Complete the following Activities. (Any two) **(4)**

1) A side of an isosceles right angled triangle is x. Find its hypotenuse.



In $\triangle PQR$, $\angle PQR = 90°$

and PQ = QR = x

$\therefore$ PR^2 = _____ ... [Pythagoras theorem]

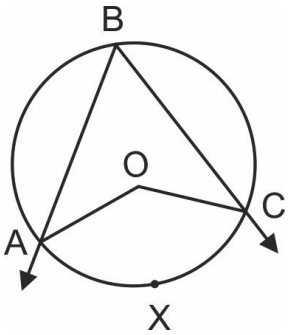
= _____

$\therefore$ PR^2 = _____

$\therefore$ PR = _____units ... [Taking square root]

$\therefore$ The length of hypotenuse is _____ units.

2) In the following figure,O is the centre of the circle. $\angle ABC$ is inscribed in arc ABC and $\angle ABC$ = 65°. Complete the following activity to find the measure of $\angle AOC$.



Activity :

$\angle ABC = \frac{1}{2}$(_____) ... [Inscribed angle theorem]

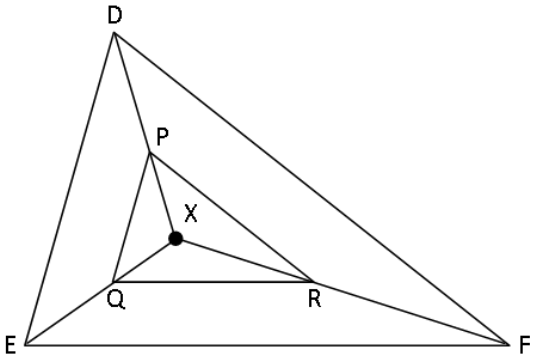
$\therefore$ _____$\times 2$ = m (arc AXC)

$\therefore$ m (arc AXC) = _____

$\angle AOC$ = m (arc AXC) ... [Definition of measure of minor arc)

$\therefore$ $\angle AOC =$ _____

3) In the figure, X is any point in the interior of triangle. Point X is joined to vertices of triangle. Seg PQ || seg DE, seg QR || seg EF. Fill in the blanks to prove that, seg PR || seg DF.



In $\triangle XDE$, $PQ \parallel DE$ ... _____

$\therefore$ _____ = _____ ... (I) (Basic proportionality theorem)

In $\triangle XEF$, $QR \parallel EF$ ... Given

$\therefore$ $\frac{XQ}{QE}$ = _____ ... (II) (Basic proportionality theorem)

$\therefore$ _____ = $\frac{XR}{RF}$ ... from (I) and (II)

$\therefore$ seg PR $\parallel$ seg DF ... (Converse of basic proportionality theorem)

B) Solve the following questions. (Any one) **(2)**

1) Prove that, any rectangle is a cyclic quadrilateral.

2) Prove that : In a triangle if the square of one side is equal to the sum of the squares of the remaining two sides, then the triangle is a right angled triangle.

Q.3 Solve the following questions. (Any one) **(3)**

1) Find the diagonal of a rectangle whose length is 16 cm and area is 192 sq.cm.

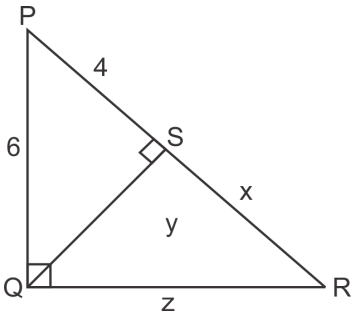
2) Draw a circle with centre P and radius 2.1 cm. Take point Q at a distance 5.2 cm from the centre. Draw tangents to the circle from point Q.
Measure and write the length of a tangent segment.

3) Ratio of areas of two triangles with equal heights is 2 : 3. If base of the smaller triangle is 6 cm then what is the corresponding base of the bigger triangle?

Q.4 Solve the following questions. (Any one) **(4)**

1) If two consecutive angles of a cyclic quadrilateral are congruent, then prove that one pair of opposite sides is parallel and other pair is congruent.

2) In the given figure an altitude is drawn to the hypotenuse. The lengths of different segments are marked in the figure.
Determine the value of x, y, z



Q.5 Solve the following questions. (Any one) **(3)**

1) Sum of the squares of adjacent sides of a parallelogram is 130 sq.cm and length of one of its diagonals is 14 cm. Find the length of the other diagonal.

2)
In ΔABC, ray BD bisects $\angle ABC$ and ray CE bisects $\angle ACB$. If seg AB $\cong$ seg AC then prove that ED || BC.