SUCCESS TEST SERIES

Unit Test No. 3

Class : IXth **Sub : Maths II (Cha. 1,2,3,4)** **Marks : 40** **Time : 2 hrs**

Q 1 A) Select the appropriate alternative. **4**

i) How many points are there in the intersection of two distinct lines ?

(A) infinite (B) two (C) one (D) not a single

ii) The number of angles formed by a transversal of two lines is .....

(A) 2 (B) 4 (C) 8 (D) 16

iii) In ΔPQR, If $\angle R > \angle Q$ then . . . . . .

(A) $QR > PR$ (B) $PQ > PR$ (C) $PQ < PR$ (D) $QR < PR$

iv) If all pairs of adjacent sides of a quadrilateral are congruent then it is called ....

(A) rectangle (B) parallelogram

(C) trapezium, (D) rhombus

Q 1 B) Solve the following questions. **4**

i) In ΔPQR, $\angle P = 70°$, $\angle Q = 65°$ then find $\angle R$.

ii) The diagonals of a rectangle are congruent. write in the if - then form.

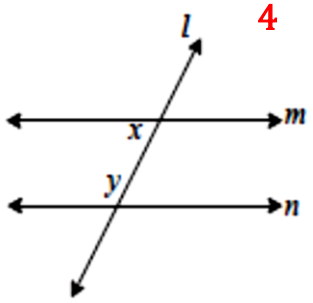
iii) Bisect seg AB of length 7cm.

iv) In ΔABC, $AB = AC$ then write the name of equal angles.

Q 2 A) Complete the following activity. (any two) **4**

i) In figure, $y = 110°$ and $x = 70°$

Are the lines m and n parallel ? Justify ?



Solution : In fig, line ☐ is the transversal of line m and n.

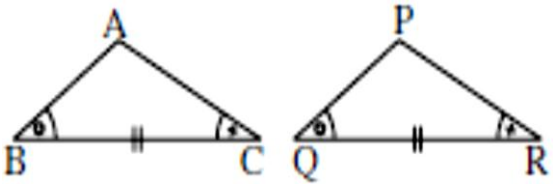
$y = 110°$ and $x = 70°$ .....( )

$\angle x + \angle y =$ ☐

$=$ ☐

$\therefore$ line m ☐ line n .....interior angle test

ii) In fig, congruent parts of triangles shown with same identical marks then show that $\Delta ABC \cong \Delta PQR$



Solution: In ΔABC and ΔPQR

$\angle B \cong \angle$ ☐

☐ $\cong$ side QR

$\angle C$ ☐ $\angle R$

$\Delta ABC \cong \Delta$ ☐ (..... test)

iii) Points X, Y, Z are collinear such that X – Y – Z and $d(X,Y) = 17$, $d(Y,Z) = 8$, find $d(X,Z)$

. **Solution:** Points X, Y, Z are collinear such that X – Y – Z (.....)

$\therefore$ ☐ $= d(X,Y) + d(Y,Z)$

$=$ ☐ $+$ ☐

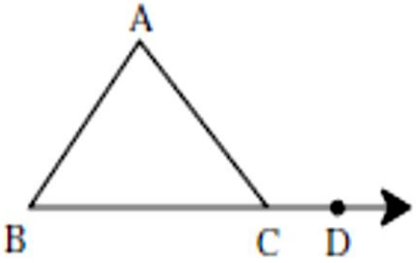
$= 25$

$\therefore$ $d(X,Z) =$ ☐

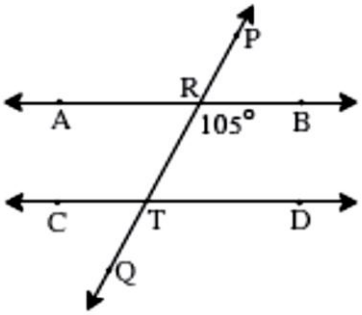
Q 2 B) Solve the following questions. (any four) 8

i) Construct ΔXYZ, such that $YZ = 7.4$ cm, $\angle XYZ = 45°$ and $XY - XZ = 2.7$ cm.

ii) In figure , $\angle ACD$ is an exterior angle of Δ ABC. $\angle B = 40°$, $\angle A = 70°$. Find the measure of $\angle ACD$.



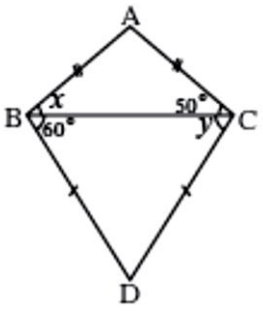
iii) Point M is the midpoint of seg AB. If $AB = 8$ then find the length of AM.



iv) In figure 2.9, line AB || line CD and line PQ is transversal. Measure of one of the angles is given. Hence find the measures of the (i) $\angle ART$ (ii) $\angle QTD$

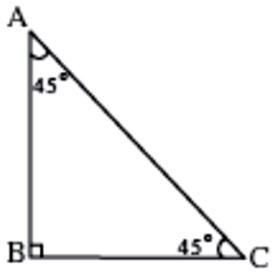
v) Find the values of x and y using the information shown in figure.

Find the measure of $\angle ABD$ and $\angle ACD$.



Q 3 A) Complete the following activity. (any one) **3**

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



Solution : In ΔABC, $\angle B = 90°$ and $\angle A = \angle C = 45°$

$\therefore$ BC = AB ..... (.....)

By Pythagoras theorem

$AB^2 + BC^2 =$ ☐

$AB^2 +$ ☐ $= AC^2$ ..... $(BC = AB)$

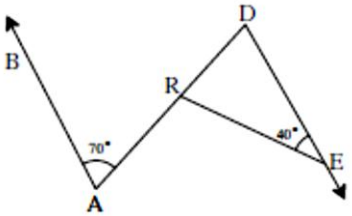
$\therefore$ $2AB^2 =$ ☐

$\therefore$ $AB^2 =$ ☐

$\therefore$ $AB = \frac{1}{\sqrt{2}} \times AC$

This property is called ☐ **theorem.**

ii) In figure, line AB || line DE. Find the measures of $\angle DRE$ and $\angle ARE$ using given measures of some angles.



Solution: ☐

line AD is the transversal ..... (given)

$\angle A = \angle$ ☐ ..... alternate angles

$\angle D = 70°$

In ΔDRE,

$\angle D + \angle E + \angle R =$ ☐ ° .... angle sum property

$\therefore$ $110° +$ ☐ $= 180°$

$\therefore$ $\angle DRE = \square$

$\angle ARE = \angle D + \square$ .... remote interior angle theorem

$= \square + 40°$

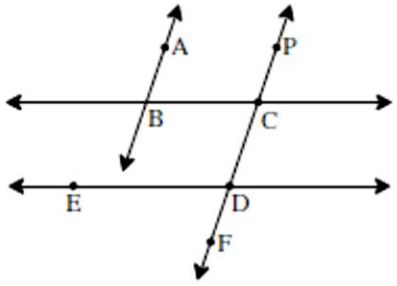
$\therefore$ $\angle ARE = \square$

Q 3 B) Solve the following questions. (any two) **6**

i) Construct ΔABC, in which $BC = 6.2$ cm, $\angle ACB = 50°$, $AB + AC = 9.8$ cm.

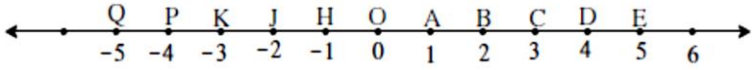
ii) prove that If two sides of a triangle are congruent then the angles opposite to them are congruent. (Theorem)

iii) In figure, if line AB || line CF and line BC || line ED then prove that $\angle ABC = \angle FDE$.



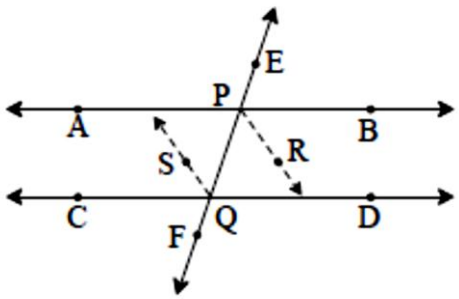
iv) Find the distances with the help of the number line given.

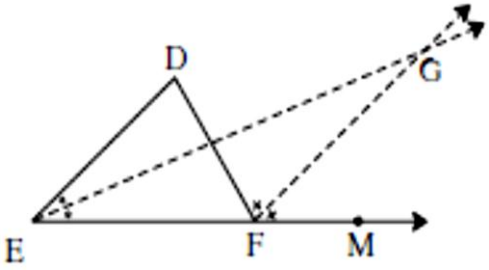
(i) d(B,E) (ii) d(J, A) (iii) d(P, C)



Q 4) Solve the following questions. (any two) **8**

i) A transversal EF of line AB and line CD intersects the lines at point P and Q respectively. Ray PR and ray QS are parallel and bisectors of $\angle BPQ$ and $\angle PQC$ respectively. Prove that line AB || line CD.





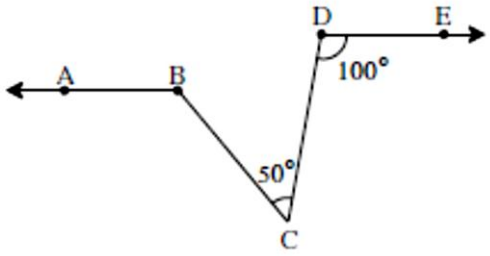
ii) In figure, line DE || line GF ray EG and ray FG are bisectors of $\angle DEF$ and $\angle DFM$ respectively.

Prove that (i) $\angle DEG = \frac{1}{2}\angle EDF$ (ii) $EF = FG$.

iii) Construct Δ LMN, in which $\angle M = 60°$, $\angle N = 80°$ and LM + MN + NL = 11 cm.

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

i) In figure, if ray BA || ray DE,
$\angle C = 50°$ and $\angle D = 100°$. Find the measure of $\angle ABC$.
(Hint : Draw a line passing through point C and parallel to line AB.)



ii) Sketch proper figure and write the answers of the following questions.
If A - B - C and $l(AC) = 11$, $l(BC) = 6.5$, then $l(AB) = ?$

*****