PRISM WORLD

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

Date: **Time: 1 hrs**

Chapter: 5

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

1) Out of the following, point …… lies to the right of the origin on X- axis.

a. (-2,0) b. (0,2) c. (2,3) d. (2,0)

2) A line makes an angle of 30° with the positive direction of X- axis. So the slope of the line is ……

a. $\frac{1}{2}$ b. $\frac{\sqrt{3}}{2}$ c. $\frac{1}{\sqrt{3}}$ d. $\sqrt{3}$

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

1) Find the distance between each of the following pairs of points.

P (– 5, 7), Q (– 1, 3)

2) Find the slopes of the lines passing through the given points.

P(-3, 1) , Q(5, -2)

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

1) Find the distance between each of the following pairs of points.

W = $\left(\frac{-7}{2}, 4\right)$, X = (11, 4)

Let W (-3.5, 4) $\equiv (x_1, y_1)$ and

X (11, 4) $\equiv (x_2, y_2)$

By _____ formula,

WX = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

= _____

= $\sqrt{\left(11 + \frac{7}{2}\right)^2 + 0^2}$

= _____

= $\sqrt{\left(\frac{29}{2}\right)^2}$

= $\frac{29}{2}$

$\therefore$ WX = _____

$\therefore$ The distance between the points W and X is _____

2)

Find the slope of the diagonals of a quadrilateral with vertices A(1, 7), B(6, 3), C(0, -3) and D (-3, 3).

Slope of diagonal AC = _____

$= \frac{-3-7}{0-1}$

$= \frac{-10}{-1}$

= _____

Slope of diagonal BD = $\frac{y_4 - y_2}{x_4 - x_2}$

= _____

$= \frac{0}{-9}$

= 0

Ans. Slope of diagonal AC is _____ and slope of diagonal BD is _____

3) Find the coordinates of the midpoint of the line segment joining P(0,6) and Q(12,20).

Let, P $\equiv$ (0, 6) $\equiv$ (x_1, y_1),

Q $\equiv$ (12, 20) $\equiv$ _____

Let, R $\equiv$ (x, y) is the midpoint of seg PQ

$\therefore$ By midpoint formula,

x $= \frac{x_1 + x_2}{2}$ y =_____

$= \frac{0+12}{2}$ $= \frac{6+20}{2}$

$= \frac{12}{2}$ = _____

$\therefore$ x = _____ y = 13

$\therefore$ R $\equiv$ _____

The coordinates of midpoint of seg PQ are _____

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

1) Find the slope of the line passing through the points A(2, 3), B(4, 7)

2) If the slope of the line joining points (k, - 3) and (4, 5) is $\frac{1}{2}$, then find the value of k.

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

1) Determine whether the given points are collinear.
A (0,2), B (1,-0.5), C (2,-3)

2) Determine whether the given points are collinear.
L(1,2) , M(5,3) , N(8,6)

3) Determine whether the points are collinear.
A (1, – 3), B (2, – 5), C (– 4, 7)

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

1) In the following examples, can the segment joining the given points form a triangle? If triangle is formed, state the type of the triangle considering sides of the triangle. L (6,4) , M (– 5,– 3) , N (– 6,8)

2) Show that the points A (1, 2), B (1, 6), C (1 + $2\sqrt{3}$, 4) are vertices of an equilateral triangle.

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

1) Find the point on x-axis which is equidistant from P (2,$-$ 5) and Q ($-$ 2,9).

2) Point P is the centre of the circle and AB is a diameter. Find the coordinates of point B if coordinates of point A and P are (2, $-$ 3) and ($-$ 2, 0) respectively.