

Question No 3

- 1 A Particle starts at $A(-2, 3)$ and its coordinates change by increments $\Delta x = 5$, $\Delta y = 6$ - find its new position.

initial coordinates. $A(-2, 3)$

Change in x coordinate. $\Delta x = 5$

Change in y coordinate. $\Delta y = 6$

Solution

$$x_{\text{new}} = -2 + 5 = 3$$

$$y_{\text{new}} = 3 - 6 = -3$$

So new Position is

$(3, -3)$ Ans

- 2 A Particle Starts at $A(6, 0)$ and its Coordinates Change by increments $\Delta x = -6, \Delta y = 0$. Find its new Position.

Data:

Initial Coordinates = $A(6, 0)$

Change in x Coordinate = $\Delta x = -6$

Change in y Coordinate = $\Delta y = 0$

Solution

New Position

$$x_{\text{new}} = 6 - 6 = 0$$

$$y_{\text{new}} = 0 + 0 = 0$$

So the new Position is

$(0, 0)$ Ans

- 3 The Coordinates of Particle change by $\Delta x = 5$ and $\Delta y = 6$ as it moves from $A(x, y)$ to $B(3, -3)$. Find x and y
New Position = $B(3, -3)$

Change in x Coordinate = $\Delta x = 5$

Change in y Coordinate = $\Delta y = 6$

$$\therefore x + 5 = 3$$

Change in x coordinate is 5

$$\therefore y + 6 = -3$$

Change in y coordinate is 6

so

$$x = 3 - 5 = -2$$

$$y = -3 - 6 = -9$$

Starting Coordinates A are

$(-2, -9)$ Ans

4. A Particle Started at $A(1, 0)$, circled the origin once counterclockwise, and returned to $A(1, 0)$. What were the net changes in its coordinates?

* Since the Particle return to its original position, the net changes in both coordinates

Change in x

$$\Delta x = 1 - 1 = 0$$

Change in y

$$\Delta y = 0 - 0 = 0$$

Net Change $\Delta x = 0$ and $\Delta y = 0$ Ans