



Finding Endpoint

Name _____

Score _____

MP:18

Example : Find the other endpoint of a line segment with the endpoint $(-7, -5)$ and midpoint $(-4, -7)$.

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \Rightarrow (-4, -7) = \left(\frac{-7 + x_2}{2}, \frac{-5 + y_2}{2} \right)$$

$$\Rightarrow -4 = \left(\frac{-7 + x_2}{2} \right), \quad -7 = \left(\frac{-5 + y_2}{2} \right)$$

$$\Rightarrow -8 = -7 + x_2, \quad -14 = -5 + y_2 \Rightarrow \mathbf{(-1, -9) = (x_2, y_2)}$$

Find the other endpoint of the line segments from the given endpoint and midpoint.

Q.No	Endpoint	Midpoint	Other Endpoint
1)	$(1, 2)$	$\left(2, \frac{7}{2} \right)$	
2)	$(0, 14)$	$(6, 7)$	
3)	$(-2, -1)$	$(-4, -1)$	
4)	$(-5, 0)$	$\left(-\frac{5}{2}, \frac{3}{2} \right)$	
5)	$(7, -8)$	$(3, -3)$	
6)	$(6, 3)$	$(-1, -4)$	



Finding Endpoint

Name _____

Score _____

Answer key

MP:18

Example : Find the other endpoint of a line segment with the endpoint $(-7, -5)$ and midpoint $(-4, -7)$.

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \Rightarrow (-4, -7) = \left(\frac{-7 + x_2}{2}, \frac{-5 + y_2}{2} \right)$$

$$\Rightarrow -4 = \left(\frac{-7 + x_2}{2} \right), \quad -7 = \left(\frac{-5 + y_2}{2} \right)$$

$$\Rightarrow -8 = -7 + x_2, \quad -14 = -5 + y_2 \Rightarrow \mathbf{(-1, -9) = (x_2, y_2)}$$

Find the other endpoint of the line segments from the given endpoint and midpoint.

Q.No	Endpoint	Midpoint	Other Endpoint
1)	$(1, 2)$	$\left(2, \frac{7}{2} \right)$	$(3, 5)$
2)	$(0, 14)$	$(6, 7)$	$(12, 0)$
3)	$(-2, -1)$	$(-4, -1)$	$(-6, -1)$
4)	$(-5, 0)$	$\left(-\frac{5}{2}, \frac{3}{2} \right)$	$(0, 3)$
5)	$(7, -8)$	$(3, -3)$	$(-1, 2)$
6)	$(6, 3)$	$(-1, -4)$	$(-8, -11)$