



Finding Endpoint

Name _____

Score _____

MP:17

Example : Find the other endpoint of a line segment with the endpoint (3, 2) and midpoint (4, 4).

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \Rightarrow (4, 4) = \left(\frac{3 + x_2}{2}, \frac{2 + y_2}{2} \right)$$

$$\Rightarrow 4 = \left(\frac{3 + x_2}{2} \right), \quad 4 = \left(\frac{2 + y_2}{2} \right)$$

$$\Rightarrow 8 = 3 + x_2, \quad 8 = 2 + y_2 \quad \Rightarrow \quad \mathbf{(5, 6) = (x_2, y_2)}$$

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

Q.No	Endpoint	Midpoint	Other Endpoint
1)	(0, -6)	(5, -4)	
2)	(-2, -1)	(3, 6)	
3)	(3, -6)	$\left(\frac{1}{2}, \frac{5}{2} \right)$	
4)	(-5, 9)	(0, 0)	
5)	(2, 4)	(4, 7)	
6)	(-1, -3)	$\left(-4, -\frac{5}{2} \right)$	



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Answer key

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$$\Rightarrow 8 = 3 + x_2, \quad 8 = 2 + y_2 \quad \Rightarrow \quad \mathbf{(5, 6) = (x_2, y_2)}$$

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

Q.No	Endpoint	Midpoint	Other Endpoint
1)	(0, -6)	(5, -4)	(10, -2)
2)	(-2, -1)	(3, 6)	(8, 13)
3)	(3, -6)	$\left(\frac{1}{2}, \frac{5}{2} \right)$	(-2, 7)
4)	(-5, 9)	(0, 0)	(5, -9)
5)	(2, 4)	(4, 7)	(6, 10)
6)	(-1, -3)	$\left(-4, -\frac{5}{2} \right)$	(-7, -2)