



Finding Endpoint

Name _____

Score _____

MP:16

Example : Find the other endpoint of a line segment with the endpoint $(0, -4)$ and midpoint $(-1, 2)$.

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \Rightarrow (-1, 2) = \left(\frac{0 + x_2}{2}, \frac{-4 + y_2}{2} \right)$$

$$\Rightarrow -1 = \left(\frac{0 + x_2}{2} \right), \quad 2 = \left(\frac{-4 + y_2}{2} \right)$$

$$\Rightarrow -2 = 0 + x_2, \quad 4 = -4 + y_2 \Rightarrow \mathbf{(-2, 8) = (x_2, y_2)}$$

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

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



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Answer key

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1)	$(-2, -4)$	$(-4, -6)$	$(-6, -8)$
2)	$(1, -3)$	$\left(-3, -\frac{3}{2}\right)$	$(-7, 0)$
3)	$(0, 5)$	$(2, 5)$	$(4, 5)$
4)	$(-7, 8)$	$(-9, 1)$	$(-11, -6)$
5)	$(1, 2)$	$\left(-\frac{1}{2}, \frac{5}{2}\right)$	$(-2, 3)$
6)	$(6, -9)$	$(3, 0)$	$(0, 9)$