Name : _____ Score : _____

Midpoint Formula

Sheet 1

Example : Find the other endpoint of the line segment with the endpoint (3, 2) and the midpoint (5, –1).

$$\textbf{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) \Rightarrow (5, -1) = \left(\frac{3 + x_2}{2}, \frac{2 + y_2}{2}\right)$$

$$\Rightarrow 5 = \frac{3 + x_2}{2}, \; -1 = \frac{2 + y_2}{2} \Rightarrow 10 = 3 + x_2, \; -2 = 2 + y_2$$

$$\mathbf{(7, -4) = (x_2, y_2)}$$

Find the other endpoint and midpoint.

1) Endpoint : (–6, –9), midpoint : (0, 0)

3) Endpoint : (1, 3), midpoint : (5, –1)

5) Endpoint : (0, –11), midpoint : (1, –6)

7) Endpoint : (7, 10), midpoint : (0, 6)

8) Endpoint : (–2, 12), midpoint : (–4, 11)