Name : _____

Midpoint Formula

Example: Find the midpoint of the line segment with the endpoints (4, 1) and (2, –5).

$$\textbf{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) = \left(\frac{4 + 2}{2}, \frac{1 - 5}{2} \right)$$

$$= \textbf{(3, –2)}$$

Find the midpoint of the line segment with the given endpoints.

1) (5, 0), (1, 4)

_____

2) (–9, 3), (7, –8)

_____

3) (–2, 9), (–7, 7)

_____

4) (5, 10), (–3, 6)

_____

5) (–1, –6), (3, 0)

_____

6) (8, 1), (–2, –5)

_____

7) (–6, –10), (–2, –8)

_____

8) (4, –1), (–5, 9)

_____

9) (2, 3), (4, –7)

_____

10) (–9, –4), (–3, 6)

_____

Answer Key

Midpoint Formula

Example: Find the midpoint of the line segment with the endpoints (4, 1) and (2, –5).

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2} , \frac{y_1 + y_2}{2} \right) = \left(\frac{4 + 2}{2} , \frac{1 - 5}{2} \right)$$

$$= (3, -2)$$

Find the midpoint of the line segment with the given endpoints.

1) (5, 0), (1, 4)

(3, 2)

2) (–9, 3), (7, –8)

$\left(-1, -\dfrac{5}{2} \right)$ **or (–1, –2.5)**

3) (–2, 9), (–7, 7)

$\left(-\dfrac{9}{2}, 8 \right)$ **or (–4.5, 8)**

4) (5, 10), (–3, 6)

(1, 8)

5) (–1, –6), (3, 0)

(1, –3)

6) (8, 1), (–2, –5)

(3, –2)

7) (–6, –10), (–2, –8)

(–4, –9)

8) (4, –1), (–5, 9)

$\left(-\dfrac{1}{2}, 4 \right)$ **or (–0.5, 4)**

9) (2, 3), (4, –7)

(3, –2)

10) (–9, –4), (–3, 6)

(–6, 1)