

Midpoint Formula

Example: The endpoints of the line segment are (9, -5) and (-7, 11); the midpoint is (m, 3). Find the value of the unknown.

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) \Rightarrow (m, 3) = \left(\frac{9 - 7}{2}, \frac{-5 + 11}{2} \right)$$

$$\Rightarrow m = \left(\frac{9 - 7}{2} \right), 3 = \left(\frac{-5 + 11}{2} \right) \Rightarrow 2m = 9 - 7, 6 = -5 + 11$$

$$\mathbf{m = 1}$$

The endpoints and the

the value of the unknown.

1) Endpoints : (v, -6)

Midpoint : (-9, -4)

$$v = \underline{\hspace{2cm}}$$

3) Endpoints : (2, -1)

Midpoint : (w, 4)

$$w = \underline{\hspace{2cm}}, x = \underline{\hspace{2cm}}$$

5) Endpoints : (-9, -1)

Midpoint : (-6, m)

$$m = \underline{\hspace{2cm}}$$

7) Endpoints : (e, -5), (-13, f)

Midpoint : (-7, -6)

$$e = \underline{\hspace{2cm}}, f = \underline{\hspace{2cm}}$$

8) Endpoints : (-8, -2), (z, -4)

Midpoint : (-1, y)

$$y = \underline{\hspace{2cm}}, z = \underline{\hspace{2cm}}$$

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The endpoints and the

the value of the unknown.

1) Endpoints : (v, -6)

Midpoint : (-9, -4)

$$v = \underline{-14}$$

3) Endpoints : (2, -1)

Midpoint : (w, 4)

$$w = \underline{2}, x =$$

5) Endpoints : (-9, -1)

Midpoint : (-6, m)

$$m = \underline{3}$$

7) Endpoints : (e, -5), (-13, f)

Midpoint : (-7, -6)

$$e = \underline{-1}, f = \underline{-7}$$

8) Endpoints : (-8, -2), (z, -4)

Midpoint : (-1, y)

$$y = \underline{-3}, z = \underline{6}$$

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