

Homework 2.1 - Midpoint and Distance

Date _____

Given the midpoint and one endpoint of a line segment, find the other endpoint.

1) Endpoint: $(6, -3)$, midpoint: $(2, 6)$
 $(-2, 15)$

2) Endpoint: $(-17, -7)$, midpoint: $(13, -20)$
 $(43, -33)$

For each pair of points, calculate the slope, midpoint, distance, and equation of the line.

3) A $(-10, 8)$ and B $(-6, 13)$

$$m = \frac{5}{4}$$

$$M(-8, 10.5)$$

$$d = 6.4$$

$$y = \frac{5}{4}x + \frac{41}{2}$$

4) C $(-12, 5)$ and D $(-9, -4)$

$$m = -3$$

$$M(-10.5, 0.5)$$

$$d = 9.5$$

$$y = -3x - 31$$

5) K(7, 17) and L(2, 14)

$$m = \frac{3}{5}$$

$$M(4.5, 15.5)$$

$$d = 5.8$$

$$y = \frac{3}{5}x + \frac{64}{5}$$

6) M(6, -11) and N(1, -11)

$$m = 0$$

$$M(3.5, -11)$$

$$d = 5$$

$$y = -11$$

7) O(-5, -10) and P(-7, -6)

$$m = -2$$

$$M(-6, -8)$$

$$d = 4.5$$

$$y = -2x - 20$$