

No 4 14 014

a (1,3) and (3,6)

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(3-1)^2 + (6-3)^2}$$

$$\sqrt{2^2 + 3^2}$$

$$\sqrt{4+9}$$

$$\sqrt{13}$$

= 3.61 units

b (2,1) and (6,4)

$$\sqrt{(6-2)^2 + (4-1)^2}$$

$$\sqrt{4^2 + 3^2}$$

$$\sqrt{16+9}$$

$$\sqrt{25}$$

= 5 units

c (1,2) and (9,8)

$$\sqrt{(9-1)^2 + (8-2)^2}$$

$$\sqrt{8^2 + 6^2}$$

$$\sqrt{64+36}$$

$$\sqrt{100}$$

No 4

d $(-1, 3)$ and $(2, -2)$

$$\sqrt{(2-(-1))^2 + (-2-3)^2}$$

$$\sqrt{3^2 + (-5)^2}$$

$$\sqrt{9 + 25}$$

$$\sqrt{34}$$

$5.8 \cdot \text{units}$

e $(0, 0)$ and $(10, 2)$

$$\sqrt{(10-0)^2 + (2-0)^2}$$

$$\sqrt{10^2 + 2^2}$$

$$\sqrt{100 + 4}$$

$$\sqrt{104}$$

$\approx 10.2 \text{ units}$

No 4

d $(-1, 3)$ and $(2, -2)$

$$\sqrt{(2+1)^2 + (-2-3)^2}$$

$$\sqrt{3^2 + (-5)^2}$$

$$\sqrt{9 + 25}$$

$$\sqrt{34}$$

$5.8 \cdot \text{Units}$

e $(0, 0)$ and $(10, 2)$

$$\sqrt{(10-0)^2 + (2-0)^2}$$

$$\sqrt{10^2 + 2^2}$$

$$\sqrt{100 + 4}$$

$$\sqrt{104}$$

$\approx 10.2 \text{ Units}$

NO 5

a

$(2, 6)$ and $(4, 10)$

$(2, 2)$ and $(2, 1-)$

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\frac{x_1}{x_2} = \frac{y_1}{y_2}$$

$$= \left(\frac{2+4}{2}, \frac{6+10}{2} \right)$$

$$\frac{x_1}{x_2} = \frac{2-2}{1+2}$$

$$= \left(\frac{6}{2}, \frac{16}{2} \right)$$

$$\frac{x_1}{x_2} = \frac{y_1}{y_2}$$

$$= (3, 8)$$

b)

$(12, 0)$ and $(2, 6)$

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\left(\frac{12+2}{2}, \frac{0+6}{2} \right)$$

$$\left(\frac{14}{2}, \frac{6}{2} \right)$$

$$(7, 3)$$

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c $(10, 1)$ and $(-4, 7)$

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

$$\left(\frac{10-4}{2}, \frac{1+7}{2}\right)$$

$$\left(\frac{6}{2}, \frac{8}{2}\right)$$

$$= (3, 4)$$

d $(-2, 11)$ and $(4, -5)$

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

$$\left(\frac{-2+4}{2}, \frac{11-5}{2}\right)$$

$$\left(\frac{2}{2}, \frac{6}{2}\right)$$

$$= (1, 3)$$

e $(-7, 6)$ and $(1, 0)$

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

$$\left(\frac{-7+1}{2}, \frac{6+0}{2}\right)$$

$$-\frac{6}{2}, \frac{6}{2}$$

$$(-3, 3)$$

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$(-1, 2)$ and $(5, 5)$

$$\text{slope} = \frac{\Delta y}{\Delta x}$$

$$\frac{5-2}{5+1} = \frac{3}{6} = \frac{1}{2}$$

$$\text{slope} = \frac{1}{2}$$

$$(3, 3)$$

$(2, 0)$ and $(0, 0)$

$$\left(\frac{5}{5+3}, \frac{5}{5+3}\right)$$

$$\left(3+0, \frac{5}{5}\right)$$

$$\left(\frac{5}{5}, \frac{5}{5}\right)$$

$$\left(\frac{5}{5}, \frac{5}{5}\right)$$

No 6

a (1,3) and (4,5)

$$\frac{\Delta y}{\Delta x} = \frac{5-3}{4-1} = \frac{2}{3}$$

$$\text{slope} = \frac{2}{3}$$

b (1,1) and (6,7)

$$\text{slope} \frac{\Delta y}{\Delta x} = \frac{7-1}{6-1} = \frac{6}{5}$$

$$\text{slope} = \frac{6}{5}$$

c (4,2) and (5,7)

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{7-2}{5-4} = \frac{5}{1}$$

$$\text{slope} = 5$$

d (1,0) and (6,5)

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{5-0}{6-1} = \frac{5}{5}$$

$$\text{slope} = 1$$