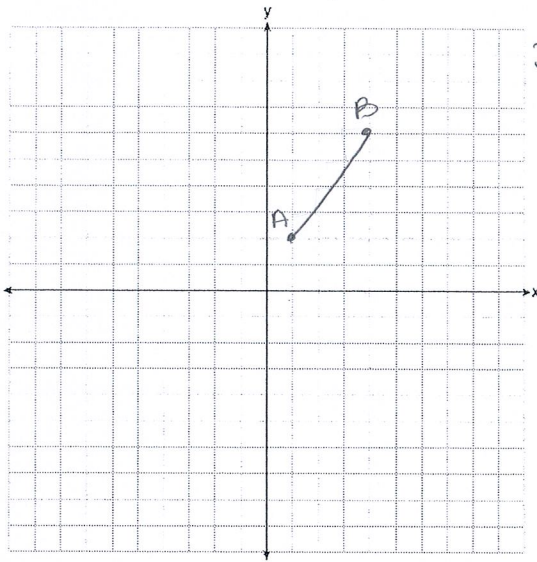


Name: NOTES  
 Geometry L 3.7

Date: \_\_\_\_\_  
 Mrs. DeNeef

The Distance Formula

Find the distance from point A(1,2) to point B(4,6).  
1st                      2nd



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

$$D = \sqrt{(3)^2 + (4)^2}$$

$$D = \sqrt{9 + 16}$$

$$D = \sqrt{25}$$

$$D = 5$$

Distance Formula:  $D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Ex1. The coordinates of the endpoints of  $\overline{AB}$  are given. In each case, find the distance from A to B and leave your answer in simplest radical form.

(a)  $A(3, -2), B(5, 4)$

(b)  $A(6, 2), B(1, -3)$

$$D = \sqrt{(5-3)^2 + (4-(-2))^2}$$

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

$$D = \sqrt{(2)^2 + (6)^2}$$

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

$$D = \sqrt{4 + 36}$$

$$D = \sqrt{25 + 25}$$

$$D = \sqrt{40}$$

$$D = \sqrt{50}$$

$$D = \sqrt{4} \sqrt{10}$$

$$D = \sqrt{2} \sqrt{25}$$

$$D = 2\sqrt{10}$$

$$D = 5\sqrt{2}$$

$$(6.32455532)$$

$$(7.071067812)$$

(c)  $A(6,2), B(1,14)$

$$D = \sqrt{(1-6)^2 + (14-2)^2}$$

$$D = \sqrt{(-5)^2 + (12)^2}$$

$$D = \sqrt{25 + 144}$$

$$D = \sqrt{169}$$

$$D = 13$$

(d)  $A(-2,2), B(1,6)$

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

$$D = \sqrt{(3)^2 + (4)^2}$$

$$D = \sqrt{9 + 16}$$

$$D = \sqrt{25}$$

$$D = 5$$