Welcome!

1. Pick up your graded test from the front table.

2. Label your ISN
pg 26 U1 Study Guide G
pg 27 U1 Test 1 G

3. Glue both papers in your ISN

4. Label pg 28 U1 Distance and Midpoint

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PG 8- WWK

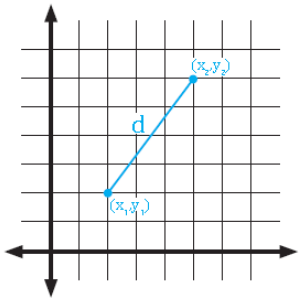
distance	measured space between 2 locations. *ALWAYS POSITIVE*	$d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$
midpoint	exactly halfway between 2 locations *Ordered pair*	$M=\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

Sep 1-1:38 PM

TOC pg 28 Distance and Midpoint

The Distance Formula

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



Example 1:
Find the distance between (4,-6) and (0,3).

x_1, y_1 x_2, y_2

$d = \sqrt{(0-4)^2 + (3-(-6))^2}$

$= \sqrt{(-4)^2 + (9)^2}$

$= \sqrt{16 + 81}$

$= \sqrt{97} \approx 9.8$

Example 2:
Find the distance between (-4,2) and (0,-8).

x_1, y_1 x_2, y_2

$d = \sqrt{0-(-4)^2 + (-8-2)^2}$

$d = \sqrt{-4^2 + 10^2}$

$d = \sqrt{16 + 100}$

$d = \sqrt{116} \approx 10.8$

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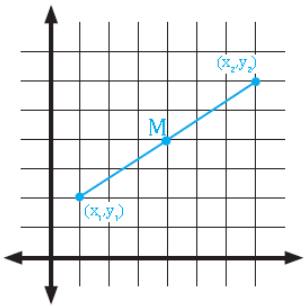
TOC pg 28 Distance and Midpoint

The Midpoint Formula

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



Example 3:
Find the midpoint of the line segment with endpoints (1,-2) and (-2,7).

x_1, y_1 x_2, y_2

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

$\left(\frac{-1}{2}, \frac{5}{2}\right)$

Example 4:
Find the midpoint of the line segment with endpoints (-4,-4) and (-2,-8).

$\left(\frac{-2+(-4)}{2}, \frac{-8+(-4)}{2}\right)$

$\frac{-6}{2}, \frac{-12}{2}$

$(-3, -6)$

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NEED TO KNOW (pg 28)

- Distance is ALWAYS POSITIVE!
- Midpoint is ALWAYS an ORDERED PAIR

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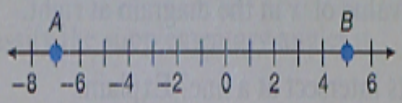
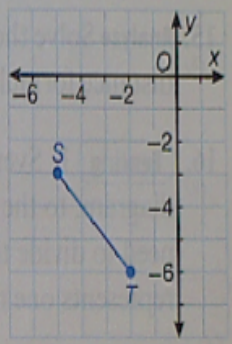
Homework ISN page 29:

Lesson Practice

a. (Ex 1) Find AB.



b. (Ex 2) What is the distance between points S and T? Round to the nearest hundredth.



c. (Ex 3) Find the distance between the points $(2, 3)$ and $(2, -4)$.

d. (Ex 4) The peak of a mountain is located at the coordinate $(120, 0)$. The hiker starts at the bottom of the trail at coordinate $(0, 125)$. If each unit on the coordinate plane represents 10 meters, how far will the hiker walk if he gets to the peak? Round to the nearest tenth.

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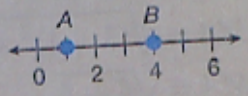
Homework page 29:

Lesson Practice

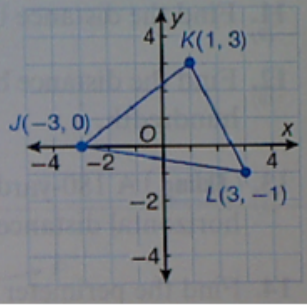
a. (Ex 1) On the number line below, what is the midpoint of $\overline{AB}$?



b. (Ex 2) Determine the coordinates of the midpoint M for $\overline{AB}$ connecting $A(5, 1)$ and $B(3, 7)$.

c. (Ex 2) Determine the midpoint of the segment connecting $(-3, 2)$ and $(4, 2)$.

d. (Ex 3) Determine the coordinates of the midpoint of each side of $\triangle JKL$.



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