

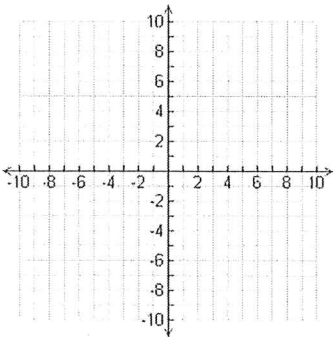
Name: Key

Hour: _____

Distance and Midpoint Homework #1

Directions: Use the Pythagorean Theorem or Distance Formula to find the distance of each segment, and then find the midpoint of each segment. You must simplify radicals and fractions – no decimals!!!!

1. G(2,6), H(-1,4)

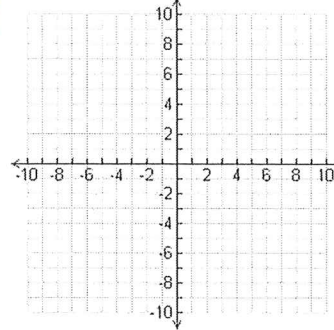


Distance: $\sqrt{13}$

Midpoint: $(\frac{1}{2}, 5)$

Slope: $+\frac{2}{3}$

2. J(7,10), K(-4,5)

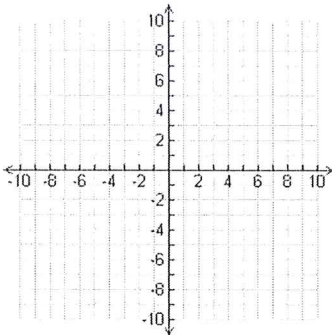


Distance: $\sqrt{146}$

Midpoint: $(\frac{3}{2}, \frac{15}{2})$

Slope: $+\frac{5}{11}$

3. D(0,2), E(4,5)



Distance: 5

Midpoint: $(2, \frac{7}{2})$

Slope: $\frac{3}{4}$

Directions: M is the midpoint of \overline{XY} . Find the missing endpoint's coordinates based on the given information.

4. M(2,3), X(-1,5) Find Y(x,y)

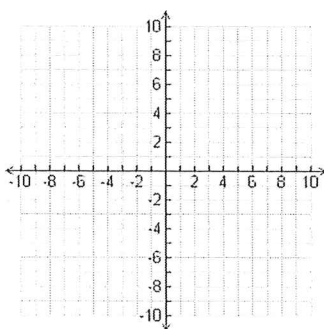
$Y(5,1)$

5. M(3,1), Y(-4,7) Find X(x,y).

$X(10,-5)$

Find the perimeter and area of each figure with the given vertices.

6.) J(-3,-3), K(3,2), and L(3,-3)



$KL=5$
 $JL=6$ } Just counted.

$JK^2=5^2+6^2$

$JK=\sqrt{61}$

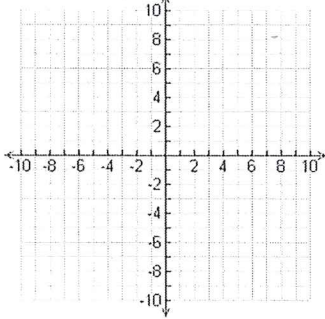
$P=5+6+\sqrt{61}$

$P=11+\sqrt{61}$

$A=\frac{1}{2} \cdot 5 \cdot 6$

$A=15 \text{ units}^2$

7.) P(-1,1), Q(3,4), R(6,0) and S(2,-3)



$$PQ^2 = 3^2 + 4^2$$

$$PQ = \sqrt{25}$$

$$PQ = 5$$

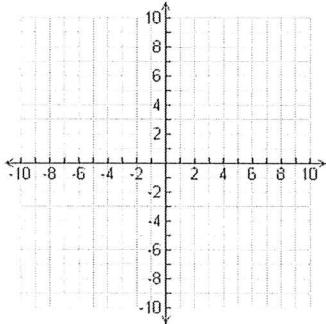
all are 5

$$P = 20$$

$$A = l \cdot w$$

$$A = 25 \cdot 2$$

8.) T(-2,3), U(1,6), V(5,2), and W(2,-1)



$$TU^2 = 3^2 + 3^2$$

$$TU = 3\sqrt{2}$$

$$VW = 3\sqrt{2}$$

$$TW^2 = 4^2 + 4^2$$

$$TW = 4\sqrt{2}$$

$$UV = 4\sqrt{2}$$

$$P = 3\sqrt{2} + 3\sqrt{2} + 4\sqrt{2} + 4\sqrt{2}$$

$$P = 14\sqrt{2}$$

$$A = l \cdot w$$

$$A = 3\sqrt{2} \cdot 4\sqrt{2} = 3 \cdot 4 \cdot \sqrt{2} \cdot \sqrt{2}$$

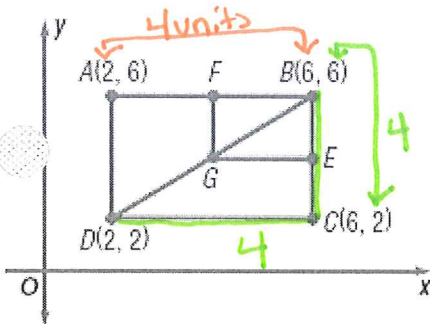
$$A = 12 \cdot 2 = 24$$

$$A = 24 \text{ units}^2$$

Use figure to the left for 6-8.

In this figure, \overline{GE} bisects \overline{BC} and \overline{GF} bisects \overline{AB} . $\overline{FG} \perp \overline{GE}$.

9. Find the coordinates of F, E and G.

cut in half.
(midpt) 😊

F: $(4, 6)$

E: $(6, 4)$

G: $(4, 4)$

10. Find the following lengths by calculating the distance between each endpoint.

$$BD^2 = 4^2 + 4^2$$

$$BD = 4\sqrt{2}$$

$$BG = \frac{1}{2} BD$$

$$BG = \frac{1}{2} 4\sqrt{2} = 2\sqrt{2}$$

AB = 4

BE = 2

BC = 4

BF = 2

CD = 4

BG = $2\sqrt{2}$

BD = $4\sqrt{2}$

DG = $2\sqrt{2}$

11. Name conclusions or relationships that you can conclude based on the information you found in #9 and 10. It must be based on what YOU found, NOT what was given to you.

Students need to have a
true statement.
Answers will vary.