

Algebra 2
Chapter 10 Test Review

Name: Key Hour: _____

Given two points, find the distance between them and give the midpoint as an ordered pair.

1. $(-4, 5)$ & $(0, 0)$
Distance: $\sqrt{41}$
Midpoint: $(-2, \frac{5}{2})$

Work Shown:
 $d = \sqrt{(0 - (-4))^2 + (0 - 5)^2} = \sqrt{41}$
midpoint: $(\frac{-4 + 0}{2}, \frac{5 + 0}{2})$
 $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
midpoint: $(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$

2. $(7, 0)$ & $(3, -2)$
Distance: $\sqrt{20}$
Midpoint: $(5, -1)$

Work Shown:
 $d = \sqrt{(3 - 7)^2 + (-2 - 0)^2} = \sqrt{16 + 4} = \sqrt{20}$
 $(\frac{7 + 3}{2}, \frac{0 - 2}{2})$

3. $(9, 1)$ & $(3, 6)$
Distance: $\sqrt{61}$
Midpoint: $(6, \frac{7}{2})$

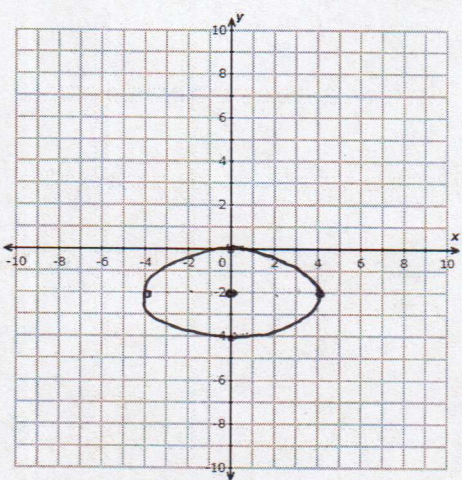
Work Shown:
 $d = \sqrt{(3 - 9)^2 + (6 - 1)^2} = \sqrt{36 + 25} = \sqrt{61}$
 $(\frac{9 + 3}{2}, \frac{1 + 6}{2})$

4. $(-8, -2)$ & $(-5, 3)$
Distance: $\sqrt{34}$
Midpoint: $(\frac{-13}{2}, \frac{1}{2})$

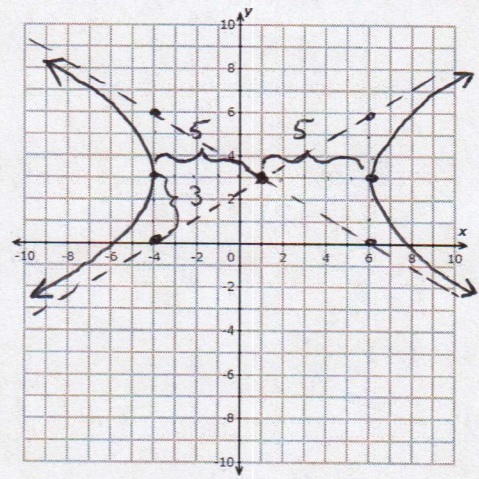
Work Shown:
 $d = \sqrt{(-5 - (-8))^2 + (3 - (-2))^2} \Rightarrow d = \sqrt{9 + 25} = \sqrt{34}$
 $(\frac{-8 + (-5)}{2}, \frac{-2 + 3}{2})$

Graph the following equations. (Circles, Ellipses, & Hyperbolas)

5. $\frac{x^2}{16} + \frac{(y+2)^2}{4} = 1$ Ellipse
center: $(0, -2)$
 $\leftarrow \rightarrow 4$
 $\uparrow \downarrow 2$

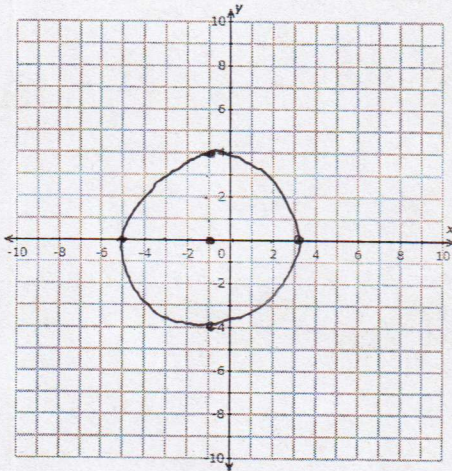


6. $\frac{(x-1)^2}{25} - \frac{(y-3)^2}{9} = 1$ Hyperbola
center: $(1, 3)$
 $\leftarrow \rightarrow 5$
 $\uparrow \downarrow 3$



$$7. y^2 + (x+1)^2 = 16$$

Circle
center: (-1, 0)
radius: 4



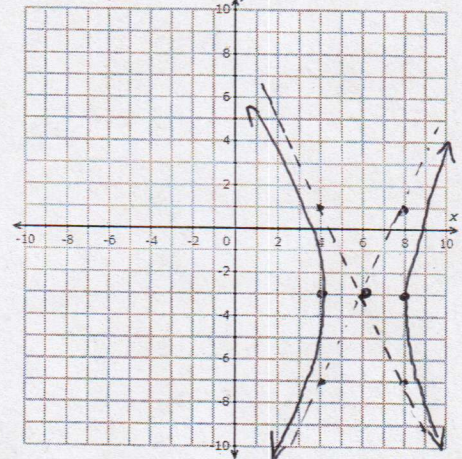
$$4(x-6)^2 - (y+3)^2 = 16$$

$$\frac{4(x-6)^2}{16} - \frac{(y+3)^2}{16} = 1$$

$$8. 4(x-6)^2 - (y+3)^2 - 16 = 0$$

$$\frac{(x-6)^2}{4} - \frac{(y+3)^2}{16} = 1$$

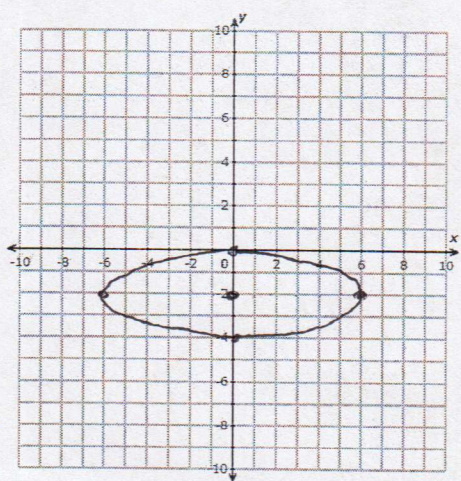
Hyperbola:
(6, -3)
↪ ↻ 2
⋈ 4



$$9. \frac{x^2}{9} + \frac{(y+2)^2}{4} = 1$$

$$\frac{x^2}{36} + \frac{(y+2)^2}{4} = 1$$

Ellipse
(0, -2)
↔ 6
↕ 2

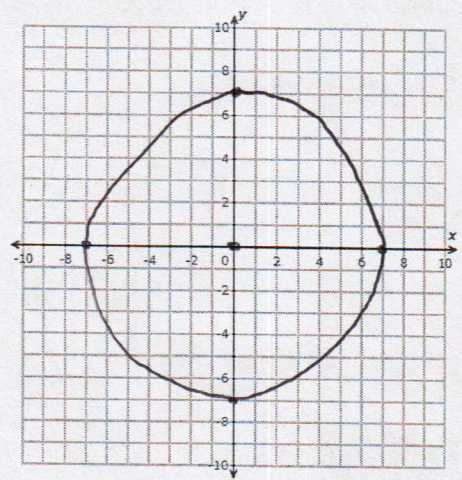


$$10. 49 - x^2 - y^2 = 0$$

$$\frac{x^2}{49} + \frac{y^2}{49} = 1$$

$$49 = x^2 + y^2$$

circle
center: (0, 0)
radius: 7

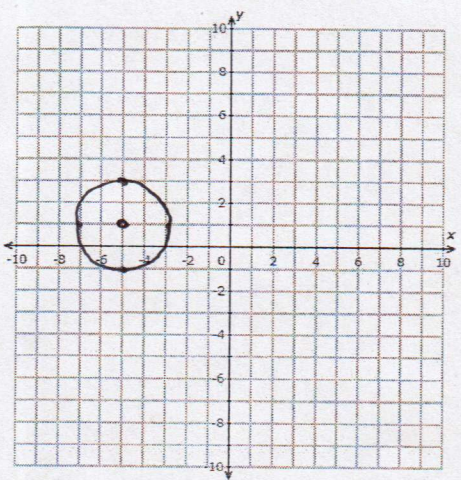


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$$11. \frac{(x+5)^2}{4} + \frac{(y-1)^2}{4} = 1$$

$$(x+5)^2 + (y-1)^2 = 4$$

circle
radius: 2
center: (-5, 1)



$$12. \frac{y^2}{9} - \frac{(x-2)^2}{36} = 1$$

$$\frac{y^2}{9} - \frac{(x-2)^2}{36} = 1$$

Hyperbola
"center": (2, 0)
∪ 3
∩ 6

