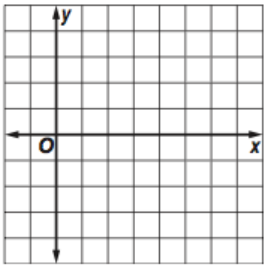
Chapter 10 Practice Test Name _____Date_____P_____

	Standard Form	Direction	Vertex/ Center	Axes	Foci	Other
Parabola	$y = a(x-h)^2 + k$	$a > 0$ up $a < 0$ down	(h,k)	Axis of Symmetry $x = h$	$\left(h, k + \frac{1}{4a}\right)$	Directrix: $y = k - \frac{1}{4a}$ Latus Rectum: $\left\|\frac{1}{a}\right\|$
	$x = a(y-k)^2 + h$	$a > 0$ right $a < 0$ left	(h,k)	Axis of Symmetry $y = k$	$\left(h + \frac{1}{4a}, k\right)$	Directrix: $x = h - \frac{1}{4a}$ Latus Rectum: $\left\|\frac{1}{a}\right\|$
Circle	$(x-h)^2 + (y-k)^2 = r^2$		(h,k)	Radius = r Diameter = $2r$		
Ellipse $a > b$	$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$	Horizontal Major Axis ($a > b$)	(h,k)	Major Axis: $2a$ units Minor Axis: $2b$ units	$(h \pm c, k)$ $a^2 - b^2 = c^2$	
	$\frac{(x-h)^2}{b^2} + \frac{(y-k)^2}{a^2} = 1$	Vertical Major Axis ($a > b$)	(h,k)	Major Axis: $2a$ units Minor Axis: $2b$ units	$(h, k \pm c)$ $a^2 - b^2 = c^2$	
Hyperbola	$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$	Horizontal Transverse Axis (x^2 is positive)	$(h \pm a, k)$	Transverse Axis: $2a$ Conjugate Axis: $2b$	$(h \pm c, k)$ $a^2 + b^2 = c^2$	Slope of Asymptotes: $\pm\frac{b}{a}$
	$\frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$	Vertical Transverse Axis (y^2 is positive)	$(h, k \pm a)$	Transverse Axis: $2a$ Conjugate Axis: $2b$	$(h, k \pm c)$ $a^2 + b^2 = c^2$	Slope of Asymptotes: $\pm\frac{a}{b}$

1. Find the a) midpoint and b) distance between (5, 2) and (2, -2)

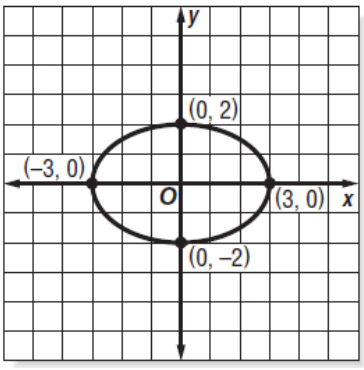
2. Graph $x = (y - 1)^2 + 2$



3. Write the equation of a circle with center (4, 10) and radius 7 units.

4. Graph the circle $(x + 2)^2 + y^2 = 9$

5. Write the equation for the ellipse shown in the picture below.



6. Write the equation for the ellipse with endpoints of
major axis at (0, 5) and (0, -5) and of minor axis at (-3, 0) and (3, 0).

7. Find the foci of the ellipse .

$$\frac{x^2}{25} + \frac{y^2}{4} = 1$$

8. Graph the ellipse $\frac{x^2}{25} + \frac{y^2}{4} = 1$.

For 9 - 10 write the equation of a hyperbola that satisfies the conditions...
9. Vertices (0, 3) and (0, -3) and conjugate axis of length 12
10. Vertices (-3, 0) and (3, 0), foci (±5, 0)

11. Graph the hyperbola

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

.

State whether the graph is a parabola, circle, ellipse, or hyperbola.

12. $25x^2 + 9y^2 = 225$

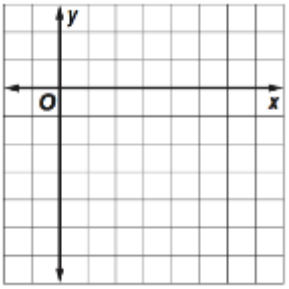
13. $4y^2 - 25x^2 = 100$

14. $x = 2y^2 - 4y - 4$

15. $4x^2 + 4y^2 = 16$

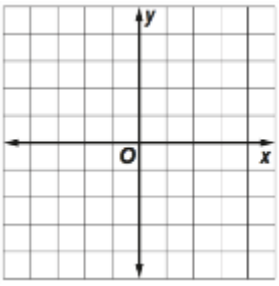
16. Write $16x^2 + y^2 = 16$ in standard form .

17. Graph it.

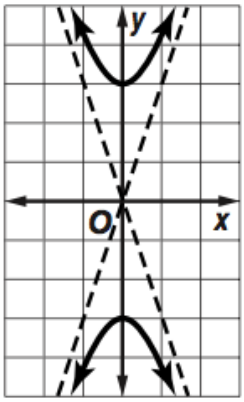


18. Write $6x^2 - 5y^2 + 24x + 20y = 56$ in standard form.

19. Graph it.



20. Which equation is graphed below?



A) $x^2 - 9y^2 = 9$

B) $y^2 + 9x^2 = 9$

C) $9x^2 - y^2 = 9$

D) $y^2 - 9x^2 = 9$