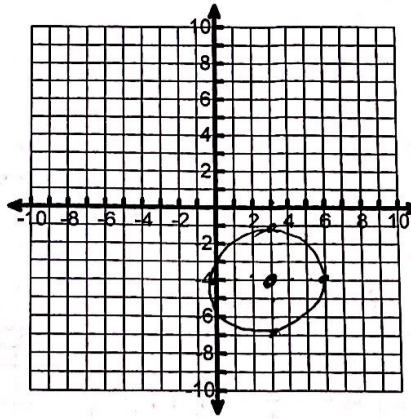


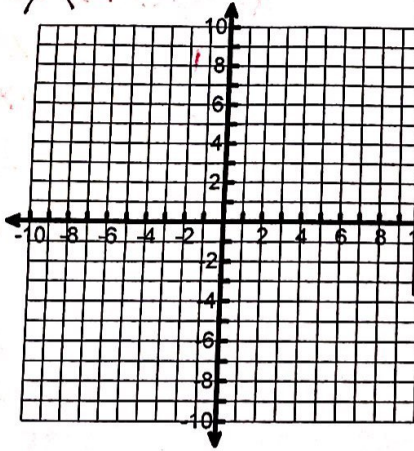
1. Graph the circle: $(x-3)^2 + (y+4)^2 = 9$



Center: $(3, -4)$
Radius: 3

Graph each of the following: *Parabola*

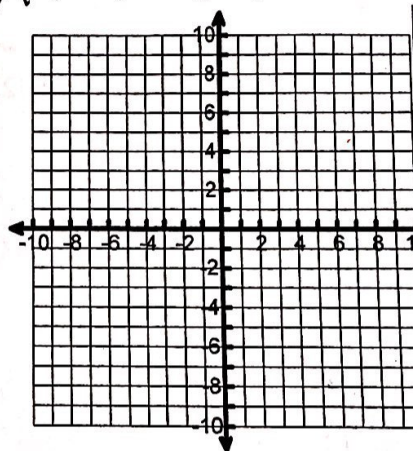
~~2.~~ $(y+2)^2 = -8(y+1)$



Vertex:
Foci:
Directrix:
AOS:

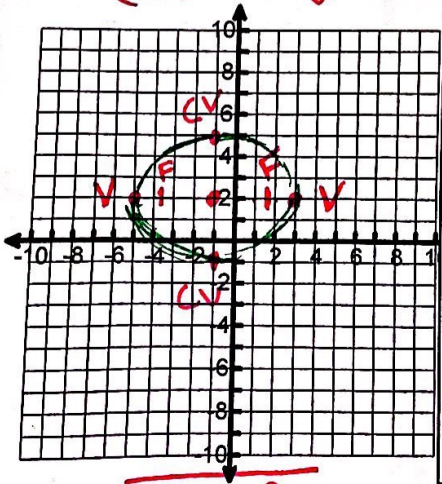
Parabola

~~3.~~ $(x+2)^2 = 4(y-1)$



Vertex:
Foci:
Directrix:
AOS:

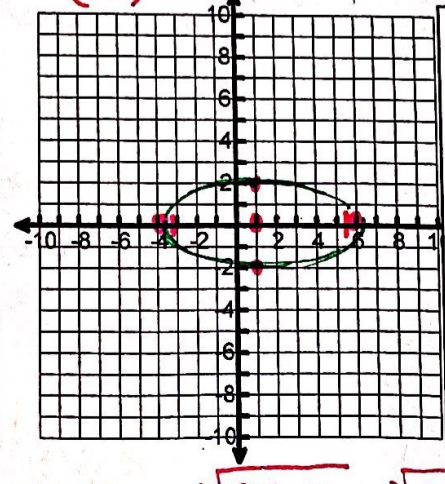
4. $\frac{(x+1)^2}{16} + \frac{(y-2)^2}{9} = 1$



Center: $(-1, 2)$
Vertices: $(-5, 2)$
 $(3, 2)$
Co-vertices: $(-1, 5)$ $(-1, -1)$
Foci: $(-1 \pm \sqrt{7}, 2)$
Major: $y = 2$
Minor: $x = -1$

$c = \sqrt{16 - 9}$
 $c = \sqrt{7} \approx 2.6$

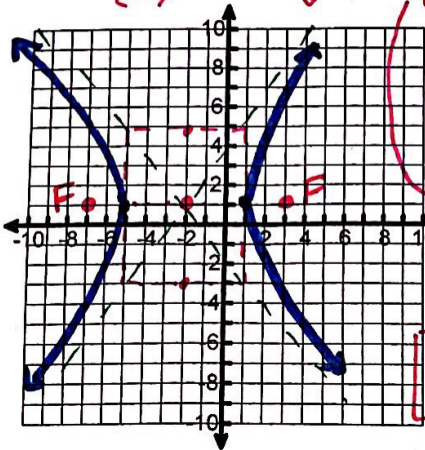
5. $\frac{(x-1)^2}{25} + \frac{y^2}{4} = 1$



Center: $(1, 0)$
Vertices: $(-4, 0)$
 $(6, 0)$
Co-vertices: $(1, 2)$
 $(1, -2)$
Foci: $(1 \pm \sqrt{21}, 0)$
Major: $y = 0$
Minor: $x = 1$

$c = \sqrt{25 - 4} = \sqrt{21} \approx 4.6$

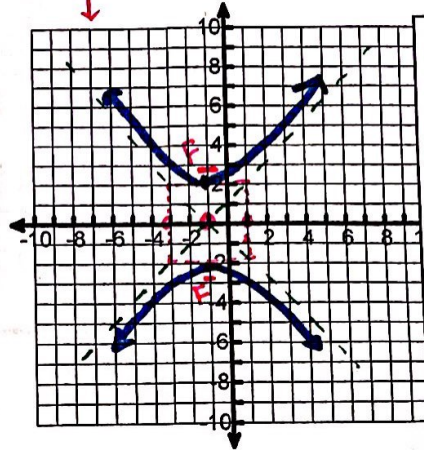
6. $\frac{(x+2)^2}{9} - \frac{(y-1)^2}{16} = 1$



$c = \sqrt{9+16} = \sqrt{25} = 5$

Center: $(-2, 1)$
 Vertices: $(-5, 1)$
 $(1, 1)$
 Foci: $(3, 1)$ $(-7, 1)$
 Asymptotes:
 $y = \pm \frac{2}{3}(x-h) + k$
 $y = \pm \frac{2}{3}(x+2) + 1$

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

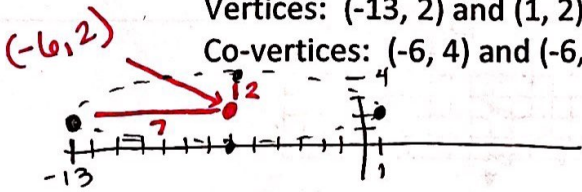


Center: $(-1, 0)$
 Vertices: $(-1, 2)$
 $(-1, -2)$
 Foci: $(-1, 2+2\sqrt{2})$
 $(-1, -2-2\sqrt{2})$
 $c = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$
 Asymptotes:
 $y = x + 1$
 $y = -x - 1$
 $y = \pm \frac{2}{2}(x-h) + k$
 $y = \pm \frac{2}{2}(x+1) + 0$
 $y = 1(x+1) = x+1$
 $y = -1(x+1) = -x-1$

8. Write the equation of the parabola with vertex $(2, -3)$ and directrix $y = -6$.

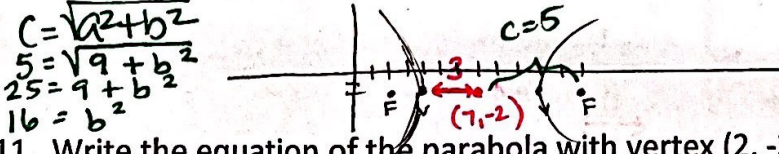
9. Write the equation of the ellipse given the following information:

Vertices: $(-13, 2)$ and $(1, 2)$
 Co-vertices: $(-6, 4)$ and $(-6, 0)$



$\frac{(x+6)^2}{49} + \frac{(y-2)^2}{4} = 1$

10. Write the equation of the hyperbola with foci $(2, -2)$ $(12, -2)$ and vertices $(4, -2)$ $(10, -2)$



$\frac{(x-7)^2}{9} - \frac{(y+2)^2}{16} = 1$

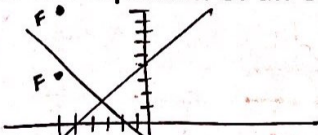
11. Write the equation of the parabola with vertex $(2, -3)$ and focus $(4, -3)$

12. Write the equation of the circle with center $(-2, 5)$ and Area = 16π

Area = 16π
 $\pi r^2 = 16\pi$
 $r = 4$

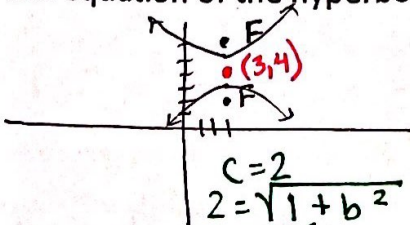
$(x+2)^2 + (y-5)^2 = 16$

13. Write the equation of an ellipse with foci $(-6, 9)$ $(-6, -3)$ and the length of the major axis = 14



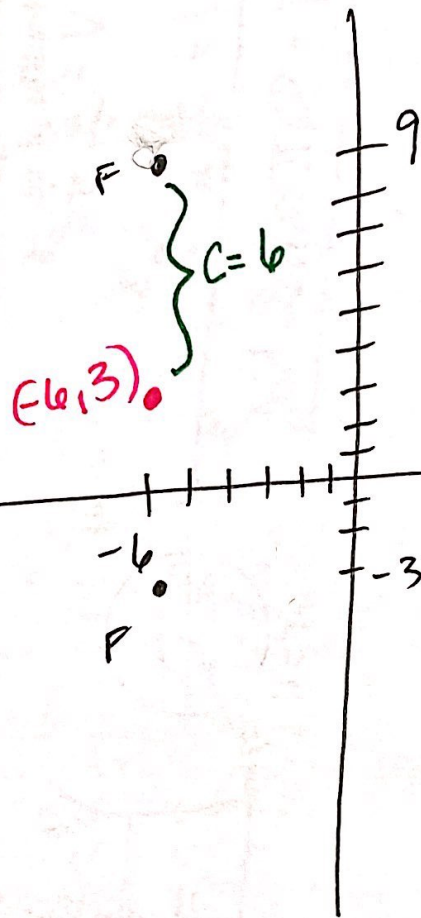
See below

14. Write the equation of the hyperbola with foci $(3, 2)$ $(3, 6)$ and the length of the transverse axis = 2.
 distance between vertices is 2.



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

#13



$$\frac{(x+6)^2}{13} + \frac{(y-3)^2}{49} = 1$$

$$c = \sqrt{a^2 - b^2}$$
$$6 = \sqrt{49 - b^2}$$
$$36 = 49 - b^2$$
$$-13 = -b^2$$
$$13 = b^2$$