DIRECTIONS: Give the center and foci of the ellipse.

1. $\dfrac{(x+3)^2}{16} + \dfrac{(y-5)^2}{12} = 1$

Center: $(-3, 5)$ Foci: $(-5, 5)$ & $(-1, 5)$

DIRECTIONS: Find an equation of an ellipse with the given information (*HINT*: Use the foci to find the center).

2. Foci: $(0, 0), (0, 8)$ $\dfrac{x^2}{20} + \dfrac{(y-4)^2}{36} = 1$
Sum of focal radii: 12

3. Foci: $(-3, -3), (-3, 3)$ $\dfrac{(x+3)^2}{7} + \dfrac{y^2}{16} = 1$
Sum of focal radii: 8

4. Foci: $(-5, 1), (3, 1)$ $\dfrac{(x+1)^2}{64} + \dfrac{(y-1)^2}{48} = 1$
Sum of focal radii: 16

5. Foci: $(-2, -3), (6, -3)$ $\dfrac{(x-2)^2}{25} + \dfrac{(y+3)^2}{9} = 1$
Sum of focal radii: 10

DIRECTIONS: Find the center, foci, verticies, co-verticies, and direction of major axis of the ellipses. Then draw their graphs (*HINT*: Create an equation of an ellipse by completing the square twice – once for x and once for y – in each problem).
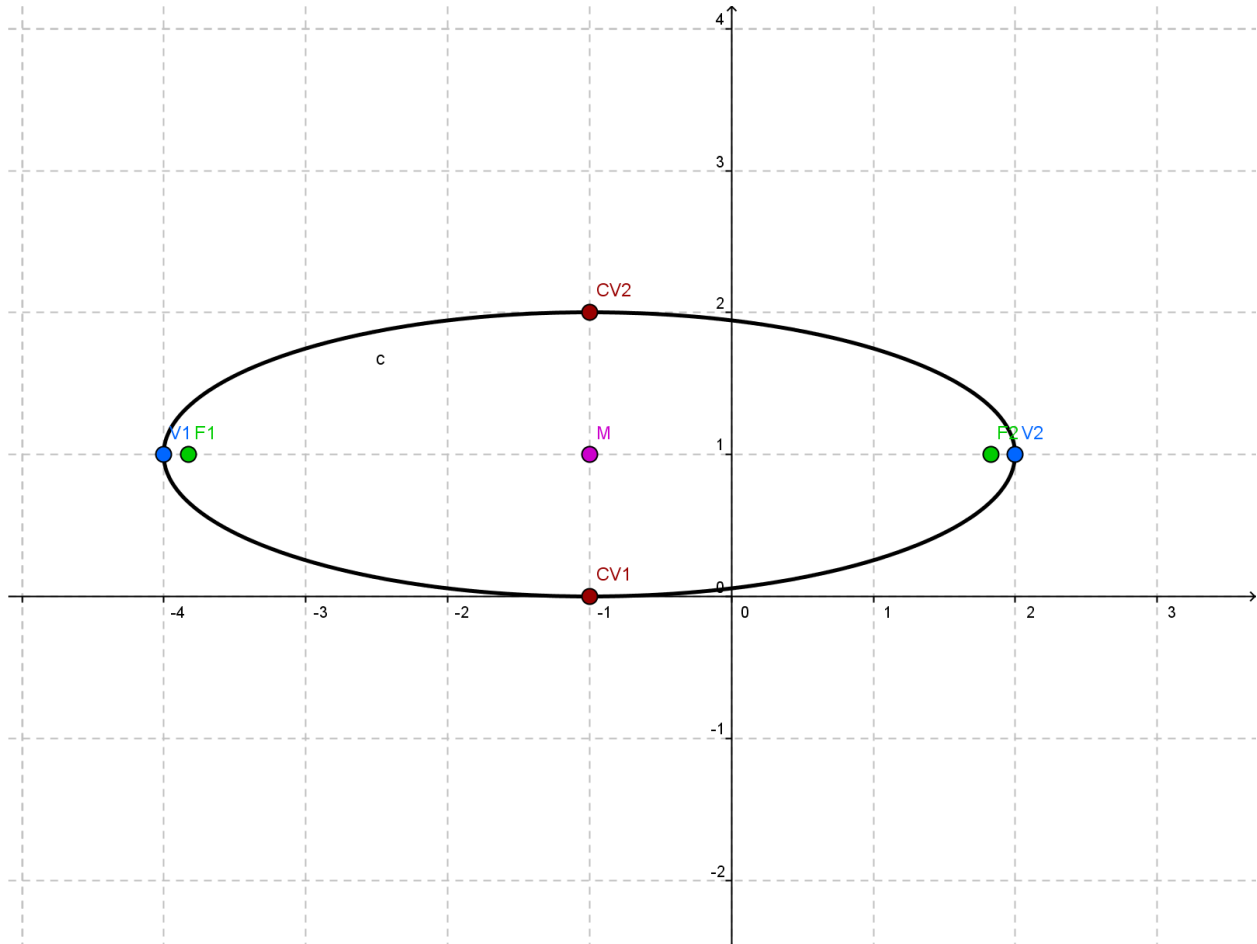
6. $x^2 + 9y^2 + 2x - 18y + 1 = 0$ $\dfrac{(x+1)^2}{9} + \dfrac{(y-1)^2}{1} = 1$
See Page 2

7. $9x^2 + 25y^2 + 36x - 150y + 36 = 0$ $\dfrac{(x+2)^2}{25} + \dfrac{(y-3)^2}{9} = 1$
See Page 3

6.   Center: $(-1, 1)$
         Major Axis: Horizontal
         Verticies: $(2, 1)$ & $(-4, 1)$
         Co-Verticies: $(-1, 2)$ & $(-1, 0)$
         Foci: $(-1 \pm 2\sqrt{2}, 1)$

7.

Center:	$(-2, 3)$
Major Axis:	Horizontal
Verticies:	$(-7, 3)$ & $(3, 3)$
Co-Verticies:	$(-2, 6)$ & $(-2, 0)$
Foci:	$(-6, 3)$ & $(2, 3)$