1. Identify the shape and put it into general form for that shape:

$$2x^2 - 20x - 8 = -2y^2 + 8y - 10$$

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$$2x^2 - 20x - 8 = -2y^2 + 8y - 10$$

$\frac{2x^2-20x+2y^2-8y=-2}{2}$ CIRCLE

$x^2-10x+25+y^2-4y+4=-1+25+4$

$(x-5)^2+(y-2)^2=28$

2. Identify the shape and put it into general form for that shape:

$$2(x-2)^2 + 4(y+3)^2 = 12$$

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$$2(x-2)^2 + 4(y+3)^2 = 12$$

$\frac{2(x-2)^2}{12} + \frac{4(y+3)^2}{12} = \frac{12}{12}$

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

ELLIPSE

3. For the Ellipse, find the coordinates of the foci:

$$\frac{(x-2)^2}{25} + \frac{(y+3)^2}{36} = 1$$

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$$\frac{(x-2)^2}{25} + \frac{(y+3)^2}{36} = 1$$

center $(2,-3)$

$a=6$ vertical

$b=5$

$c^2=a^2-b^2$

$c^2=36-25$

$c=\sqrt{11}$

Coords: $(2,-3\pm\sqrt{11})$

4. GRAPH THE SHAPE:

$$\frac{(x-2)^2}{25}+\frac{(y+3)^2}{4}=1$$

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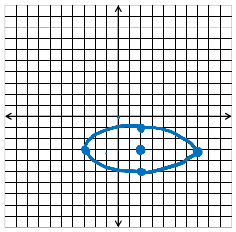
$$\frac{(x-2)^2}{25}+\frac{(y+3)^2}{4}=1$$

Ellipse
center
(2, -3)
a = 5 hor.
b = 2



5. GRAPH THE SHAPE:

$$(x+5)^2+y^2=49$$

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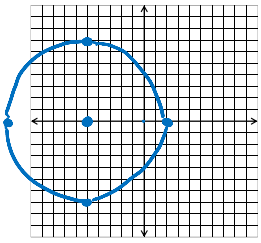
$$(x+5)^2+y^2=49$$

Circle
(-5, 0)
r = 7



6. IDENTIFY THE SHAPE AND PUT IT INTO GENERAL FORM FOR THAT SHAPE:

$$3x^2+5y^2-12x+30y+42=0$$

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ELLIPSE

$$3x^2+5y^2-12x+30y+42=0$$

$3x^2-12x+5y^2+30y=-42$

$3(x^2-4x+4)+5(y^2+6y+9)=-42+12+45$

$\frac{3(x-2)^2}{15}+\frac{5(y+3)^2}{15}=\frac{15}{15}$

$$\frac{(x-2)^2}{5}+\frac{(y+3)^2}{3}=1$$

7. Write the equation of the ellipse with:

Major axis length = 12
Coordinates of minor axis:
(-1, -4) and (-1, 2)

7. Write the equation of the ellipse with:

Major axis length = 12 $2a=12$ $a=6$ horizontal
Coordinates of minor axis:
(-1, -4) and (-1, 2) $2b=6$ $b=3$

center $(-1,-1)$

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

8. Write the equation of the ellipse with:

Major axis length = 12
Coordinates of foci:
(-3, 2) and (3, 2)

8. Write the equation of the ellipse with:

Major axis length = 12 $a=6$
Coordinates of foci:
(-3, 2) and (3, 2) horizontal $2c=6$ $c=3$ Center $(0,2)$

$c^2=a^2-b^2$
$9=36-b^2$
$b^2=27$

$$\frac{x^2}{36}+\frac{(y-2)^2}{27}=1$$

9. Given the Parametric Equations for the Shape, write the General Equation for the shape:

$X = 3 + 4\cos t$
$Y = -1 + 5\sin t$

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ellipse
center $(3,-1)$
$a=5$ (vert.)
$b=4$

$$\frac{(x-3)^2}{16}+\frac{(y+1)^2}{25}=1$$