Name _____ **Block** _____ **Date** _____

1. Transform each of the given equations according to the statement provided:

   a. Given $y = \sqrt{x}$ translate up 5 and left 3. Graph on a separate sheet of graph paper.

   1a. Answer:

   b. Given $y = (x+3)^2 - 7$ dilate vertically by a scale of 2. Graph on a separate sheet of graph paper.

   1b. Answer:

   c. Given $y = 2|x-3|+4$ reflect across the y-axis. Graph on a separate sheet of graph paper.

   1c. Answer:

   d. Given $x^2+y^2 = 1$ dilate by a scale of 3, translate up 3 and left 5. Graph on a separate sheet of graph paper.

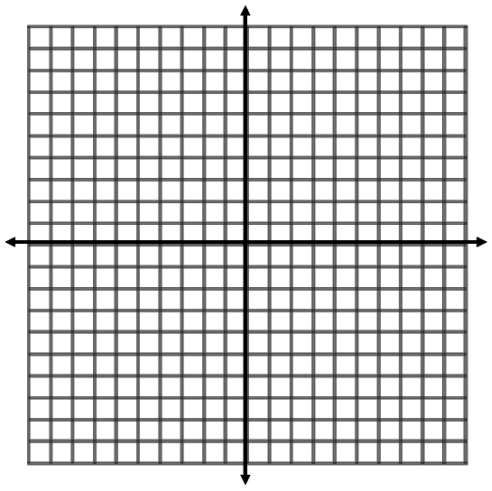
   1d. Answer:

   e. Given $x^2+y^2 = 1$ dilate vertically by 2 and horizontally by 9, translate up 4 and right 5. Graph on a separate sheet of graph paper.

   1e. Answer:

2. Given $x^2+y^2 = 1$ dilate by a scale of 3 horizontally and 6 vertically, translate down 9 and left 2. Graph the **transformed** equation.

   6. Equation:



Name _____ **Block** _____ **Date** _____

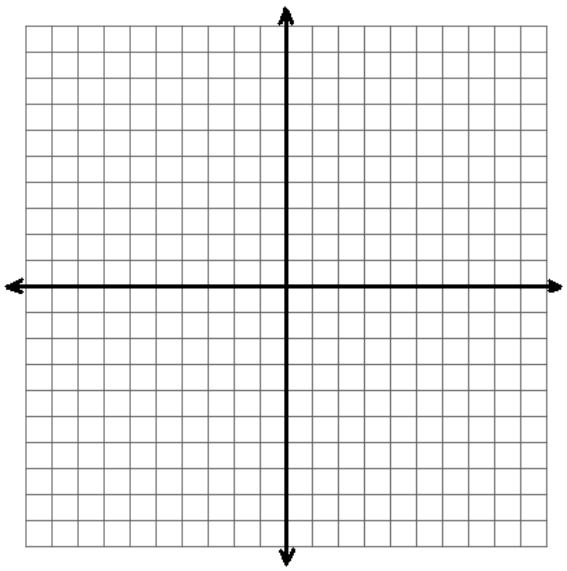
3. Graph the following hyperbola and list *a*, *b*, and center point for each:

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

a=_____

b=_____

center point: _____

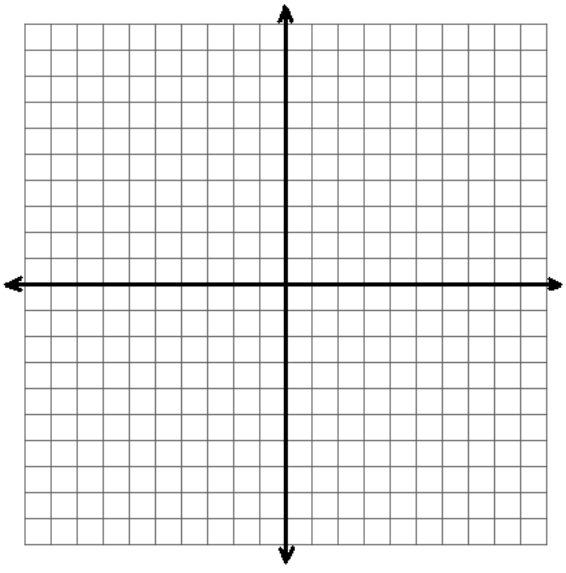


4. Convert the following rational function to standard form and graph:

$$f(x)=\frac{5x+8}{x+3}$$

a. Standard form= _____

b.



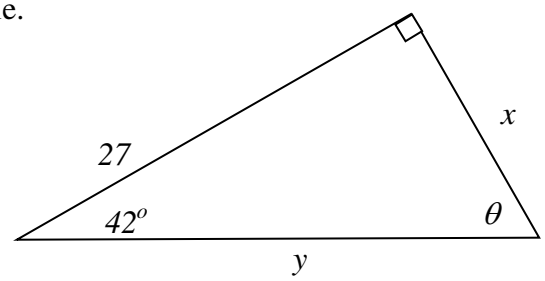
Name _____ **Block** _____ **Date** _____

5. Solve the triangle.

x=_____

y=_____

θ=_____

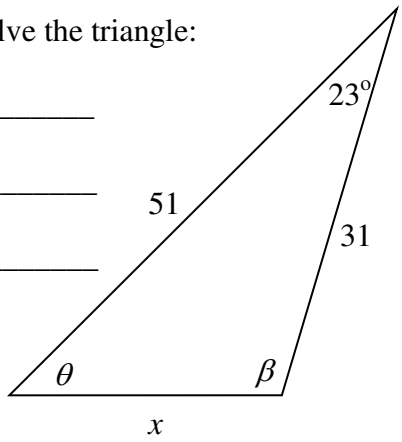


6. Solve the triangle:

x=_____

θ=_____

β=_____



7. You want to hang a banner that say "Have a Great Summer" on the front of the school. Your ladder is 28 feet long and safety restrictions say the base of the ladder must me 5 feet from the wall. How far from the ground can you safely hang the banner? Draw a picture to represent this scenario.

8. A building is installing a new wheel chair ramp to meet ADA code regulations. The ramp must have an angle of 7^{o}. The ramp is leading up to a door that is 18 inches above the ground level where the ramp will start. How long, in feet, will the ramp have to be to meet ADA regulations? Draw a picture to represent this scenario.

9. A regular octagon is inscribed in a circle with radius 40cm. Find the perimeter of the octagon.