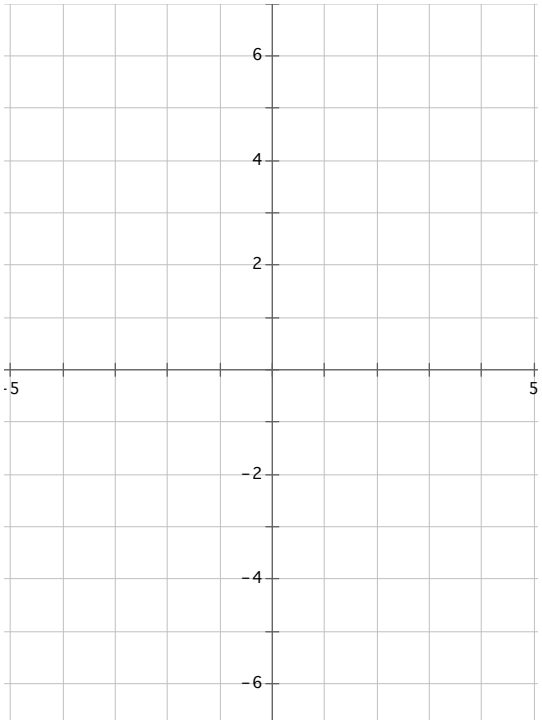
ALG III 2/27/18 Name:_____

Quiz Review

1. Given $f(x) = -\frac{1}{3}(x+6)$



a. Graph $f(x)$

b. Will the inverse of f(x) be a function? Explain.

c. Graph $f^{-1}(x)$ on the same coordinate plane in a different color.

d. Using the graph, find the equation of $f^{-1}(x)$

e. Algebraically determine the equation of $f^{-1}(x)$. Your results should match part d.

f. Use composition to verify f(x) and $f^{-1}(x)$ are inverses of each other.

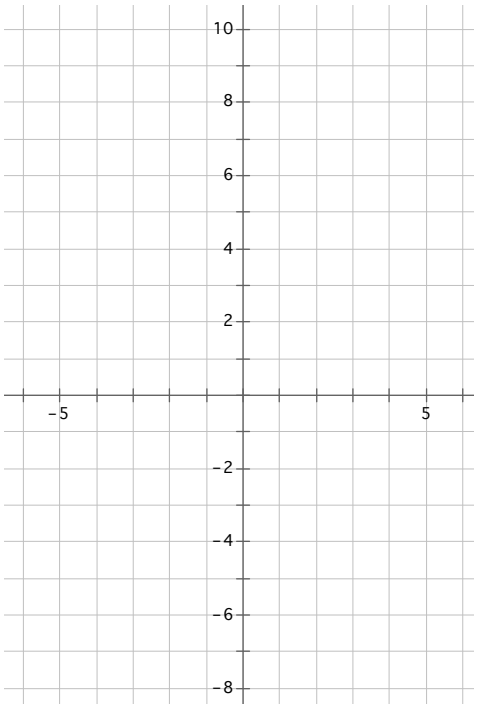
2. Verify that $f^{-1}(x)=(x-4)^2+2$ and $f(x)=\sqrt{x-2}+4$ are inverses of each other.

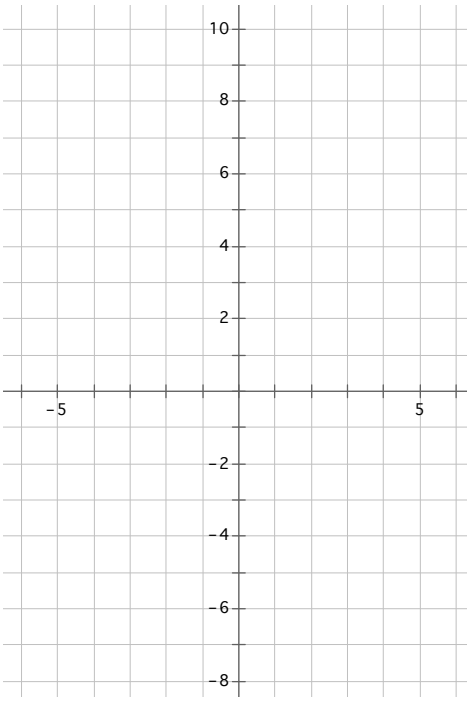
3. Graph each function

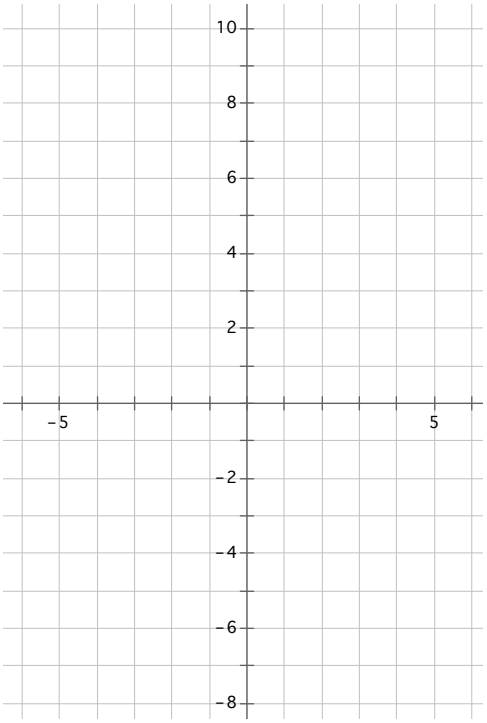
a. $f(x)=-3(2)^x+4$

b. $f(x)=8\left(\frac{1}{2}\right)^x-5$

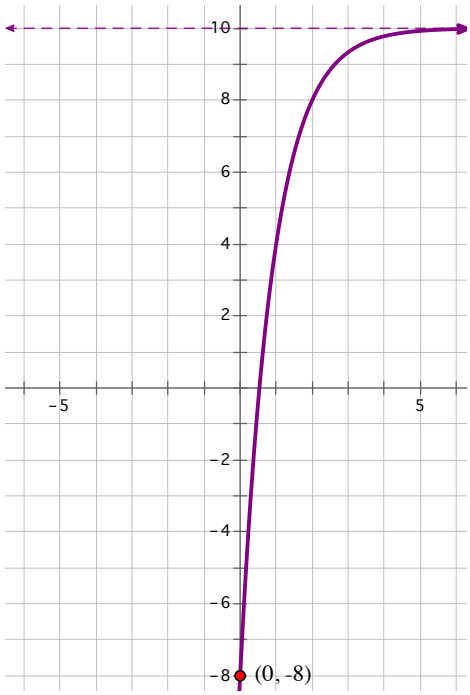
c. $f(x)=8\left(\frac{3}{4}\right)^{-x}-6$

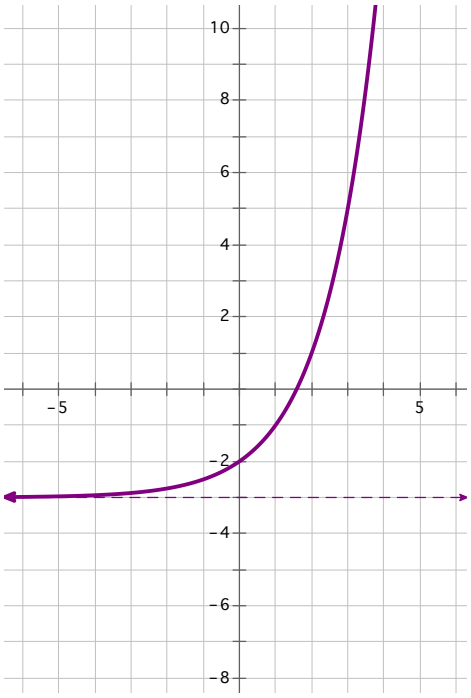






4. Write an equation for each graph.





5. Solve each equation.

a. $4^{3x} = 8^{x+4}$

b. $\left(\frac{1}{27}\right)^{x-1} = 9^{2x}$

c. $4^{x} = \frac{1}{64}$

d. $10^{3x-7} = 1000^{2x+2}$

2. Given $f(x)=\frac{10x+9}{4}$ and $g(x)=\frac{2x-9}{5}$,

a. Use composition to show that these functions are NOT inverses of each other.

b. Algebraically determine $f^{-1}(x)$.

c. Use composition to prove that $f(x)$ and $f^{-1}(x)$ are inverse functions.