Algebra II & Trigonometry
Exam Review problems
Chapter 6

Name _____

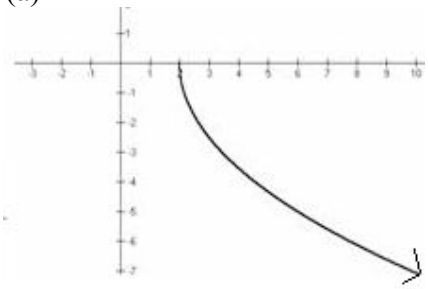
1. Write the domain of each function below.

(a) $f(x)=\dfrac{x-3}{x-4}$ (b) $g(x)=\sqrt{x-2}$ (c) $g(x)=3x-7$

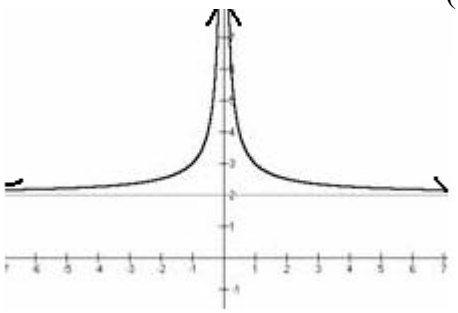
_____ _____ _____

2. Find the domain of and range for each function below. In (b) the lines $x = 0$ and $y = 2$ are asymptotes.

(a)



(b)



(c)

x	*y*
-1	-5
2	-3
5	6

D _____ R _____ D _____ R _____ D _____ R _____

(d) $y=(x-3)^2+4$ (e) $y=-|x|+5$ (f) $y=x^2+6x+2$

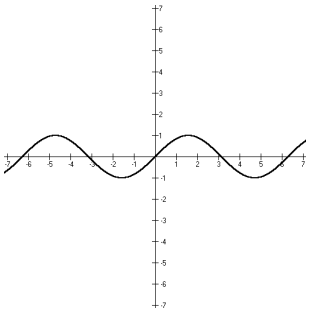
D _____ R _____ D _____ R _____ D _____ R _____

3. Find the inverse of the following functions:

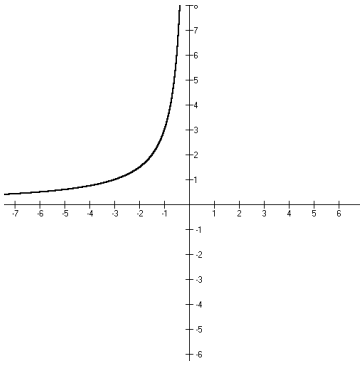
(a) $f(x)=2x+6$ (b) $f(x)=\sqrt{x-12}$

_____ _____

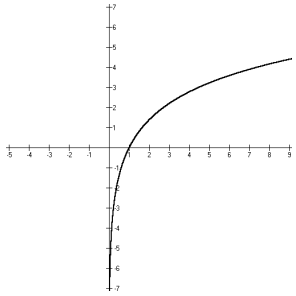
4. Graph the inverse of each function shown below and say whether or not each original graph is a function.



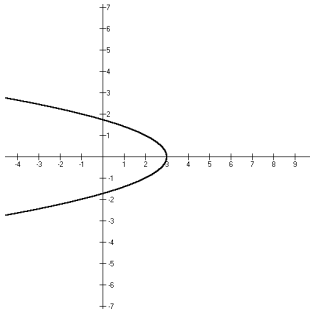
Yes/No



Yes/No



Yes/No



Yes/No

6. Let $f(x) = 12 - 3x.$

(a) Find $f(15)$ (b) Solve $f(x) = 15$

_____ _____

7. Let $f(x) = -2x^2 - 3x + 5.$

(a) Find $f(3)$ (b) $f(a) = 0$

_____ _____

8. Let $f(x) = x^2 + 1$ and $g(x) = 2x - 3$. Find the following and simplify completely.

(a) $f(x) + g(x)$ (b) $f(x) - g(x)$ (c) $f(x) \cdot g(x)$ (d) $g(x)^2$

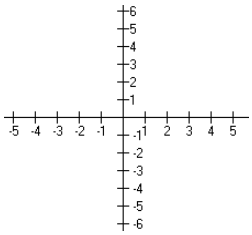
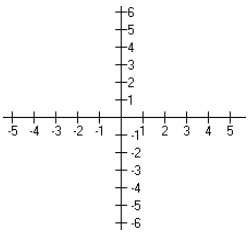
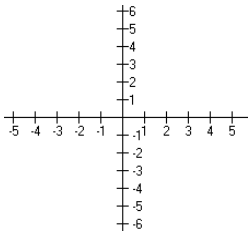
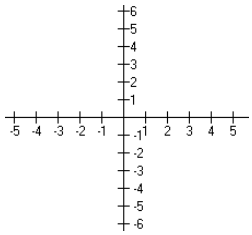
_____ _____ _____ _____

(e) $g(a+3)$ (f) $f(g(x))$ (g) $g(f(x))$ (h) $g(g(x))$

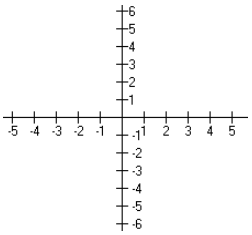
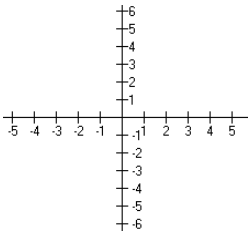
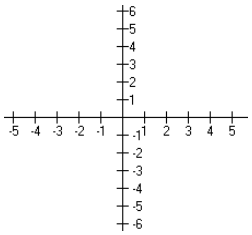
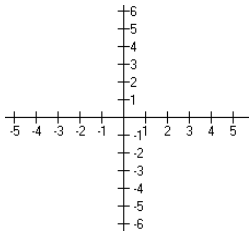
_____ _____ _____ _____

9. Graph each of the following. Label key points and asymptotes.

(a) $y = |x|$ (b) $y = |x+1| + 2$ (c) $y = x^3$ (d) $y = -x^3 + 2$

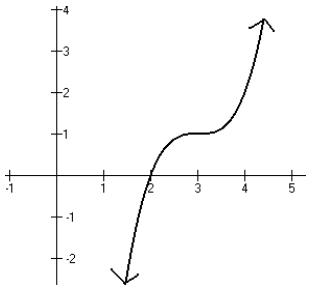





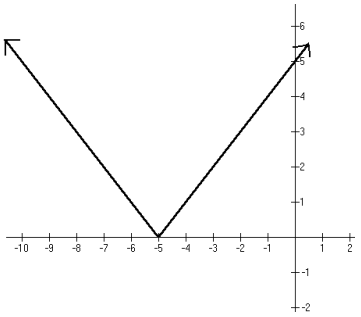
(e) $y = \sqrt{x}$ (f) $y = \sqrt{x-3} + 4$ (g) $y = -\sqrt{x}$ (h) $y = \sqrt{-x}$

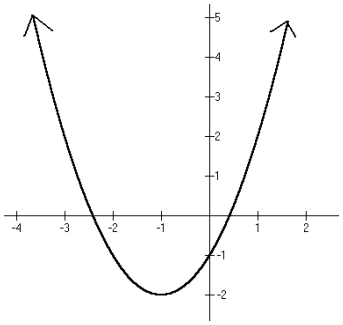





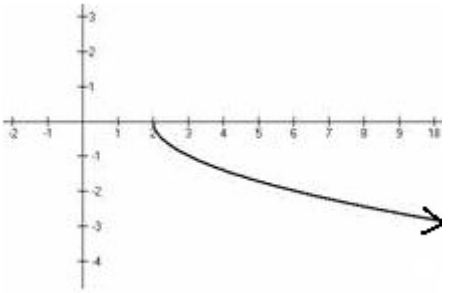
10. Write an equation for each graph below.

(a) (b) (c) (d)

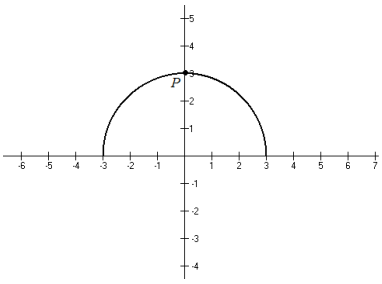






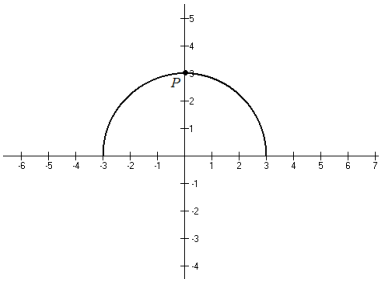


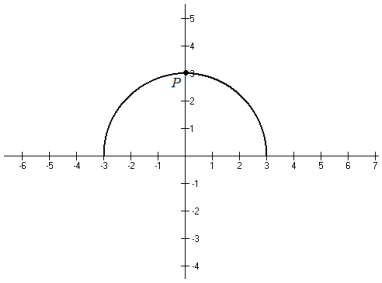
11. A function $f(x)$ is graphed to the right.

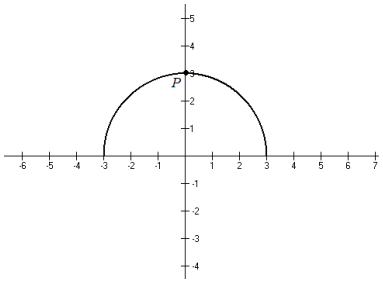


Sketch a graph of each transformation of $f(x)$
Be sure to clearly mark the image of point P

(a) $f(x)-1$ (b) $f(x+2)$ (c) $-f(x)-1$

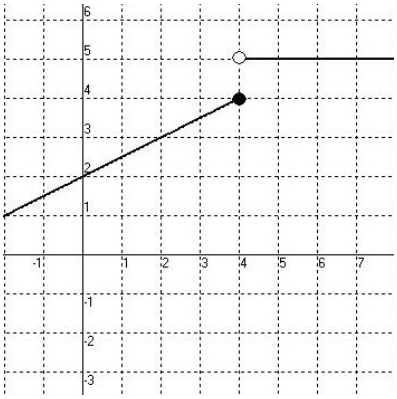




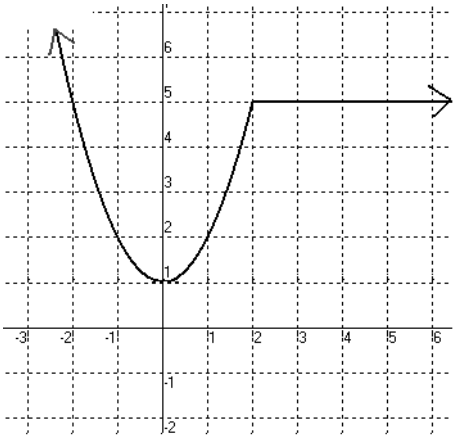


12. Write an equation for each compound function below.

(a)



(b)



{

{