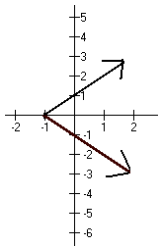
Algebra II & Trigonometry
Final Exam in class review
Chapter 6: Functions

Name _____

Graphs and tables.

(a)



Function? _____

Domsin? _____

Range? _____

(b)

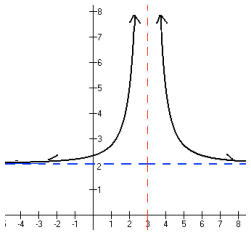
x	*y*
1	3
3	5
7	3

Function? _____

Domain? _____

Range? _____

(c)



Function? _____

Domain? _____

Range? _____

Equations

(1) Ideally, given an equation you can just graph it. You should know the following graphs for the final…

$y = |x|$ $y = x^2$ $y = x^3$ $y = x^4$ $y = \sqrt{x}$

$y = \sqrt[3]{x}$ or $y = x^{\frac{1}{3}}$ $y = 2^x$ $y = \left(\frac{1}{2}\right)^x$ $\log_2 x$

ex Find the domain and range of each of the following.

(a) $y = -(x-3)^2$

Domain _____
Range _____

(b) $y = \sqrt{x-4}+1$

Domain _____
Range _____

(c) $y = 3-|x|$

Domain _____
Range _____

(2) If you can't graph it, you can still usually find the domain by asking "what can't I plug in". Remember, the things to worry about are dividing by zero or taking the square root of a negative.

ex Find the domain of each function below.

(a) $y = \dfrac{x-3}{2x+12}$

(b) $y = \dfrac{3x+11}{x^2-5x-6}$

(c) $y = \sqrt{x+5}$

(d) $y = \sqrt{4-20x}$

_____ _____ _____ _____

Function notation

ex Let $f(x)=2x+8$ and $g(x)=3x-5$

(a) Find $f(-30)$ _____

(b) Solve $g(x)=-23$ _____

(c) Find $f(x)-g(x)$ _____

(d) Find $f(x)\cdot g(x)$ _____

(e) Find $f(g(x))$ _____

(f) Find $g(g(x))$ _____

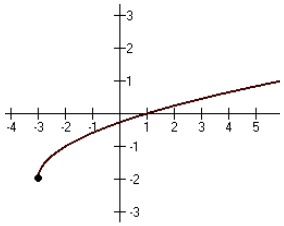
(g) $(g(x))^2$ _____

Inverses

ex Give the inverse of each relation!

(a)

x	y
1	3
3	5
7	3

(b) 

(c) $f(x)=\frac{1}{3}x-5$

(d) $f(x)=\sqrt{2x-3}+4$

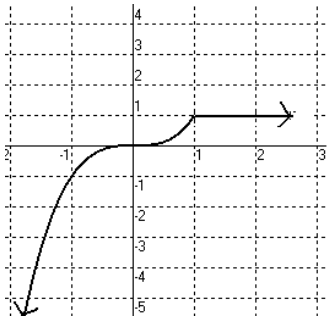
Compound Functions

ex Let $f(x)=\begin{cases}2x+3, & if \quad x>1\\ -x+4, & if \quad x\le 1\end{cases}$

(a) What is $f(2)$? _____ (b) What is $f(-2)$? _____

(c) What is $f(1)$? _____ (d) What is $f(f(-3))$? _____

ex Write a piecewise equation for each compound function graphed below.

(a) 

(b)