Get out a piece of paper and write down everything you remember about functions and their inverses.

*Also get out your 6.1 packet, we'll go over any questions you have on that too!

Inverse Functions

- reverse order of operations to solve.
- Composition, $f(g(x)) = x$ and $g(f(x)) = x$ will tell you if two functions are inverses.
- Domain & range switch, axes switch
  - $(x, y) \rightarrow (y, x)$
  - $(3, 2) \rightarrow (2, 3)$
- Slopes are reciprocals (linear)
- Quadratic inverses must have a restricted domain, otherwise they are not functions
- Functions & their inverses are reflections over the line $y = x$

Dec 10-3:22 PM

Hang onto:

- Chapter Summaries (ch 1-8, no 4) from textbook.
- Modules 4, 1, 2, 6

SAGE

- Mon 4/25 & Wed 4/27

Find the other two trig ratios based on the one that is given.

9. $\sin\theta = \frac{4}{5}$ $\theta = 53.1$	$\cos\theta =$ 0.6	$\tan\theta =$ 1.3
10. $\sin\theta =$	$\cos\theta = \frac{5}{13}$	$\tan\theta =$
11. $\sin\theta =$	$\cos\theta =$	$\tan\theta = 1$
12. $\sin\theta = \frac{1}{2}$	$\cos\theta =$	$\tan\theta =$
13. $\sin\theta =$	$\cos\theta = \frac{9}{41}$	$\tan\theta =$
14. $\sin\theta =$	$\cos\theta =$	$\tan\theta = \sqrt{3}$

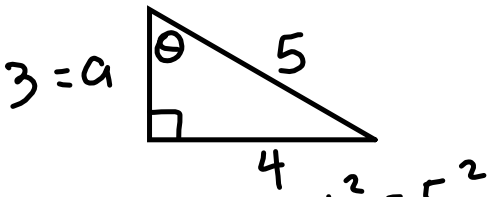
9) $\sin\theta = \frac{4}{5}$ opp / hyp

$\sin^{-1}(\sin\theta) = \sin^{-1}(\frac{4}{5})$

$\theta = 53.1^\circ$

$\cos\theta = \cos 53.1^\circ = 0.6$

$\tan\theta = \tan 53.1^\circ = 1.3$



$3 = a$

$a^2 + 4^2 = 5^2$

$a = 3$

$\cos\theta = \frac{3}{5}$

$\tan\theta = \frac{4}{3}$

How do you find the inverse of a function algebraically?

Find the inverse of each function.

$g(x) = \frac{2}{3}x + 2$ $\qquad$ $f(x) = (x+2)^5 + 1$

$g(x) = \frac{3}{-x-1}$

$y = 6^x + 5$

$x = 6^y + 5$

$-5 \quad -5$

$(x-5) = 6^y$

$\log_6(x-5) = y$

$(x-5) = 6^y$

$\log_6(x-5) = \log_6 6^y$

$\log_6(x-5) = y$

$y = \frac{2^x}{2}$

$2 \cdot x = \frac{2^y}{2} \cdot 2$

$2x = 2^y$

$\log_2(2x) = y$ or $\log_2 2x = \log_2 2^y$

$\log_2 2x = y$

$y = -10 \log_4 x$

$\frac{x}{-10} = \frac{-10 \cdot \log_4 y}{-10}$

$-\frac{x}{10} = \log_4 y$

$4^{-\frac{x}{10}} = y$

$-\frac{x}{10} = \log_4 y$

$4^{-\frac{x}{10}} = 4^{\log_4 y}$

$4^{-\frac{x}{10}} = y$

Apr 5-8:14 AM

Given two functions, how can you tell if they're inverses of one another?

State if the given functions are inverses.

$$g(x) = \sqrt[5]{-x-1}$$
$$f(x) = -x^5 - 1$$

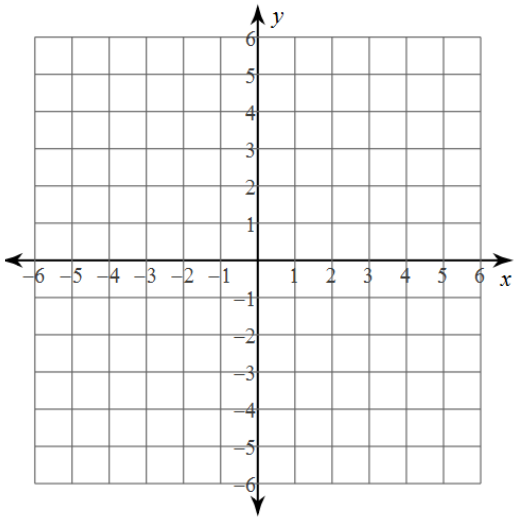
$$h(x) = -\frac{3}{x+3} - 2$$
$$f(x) = \frac{4}{x-3} + 1$$

Apr 5-8:20 AM

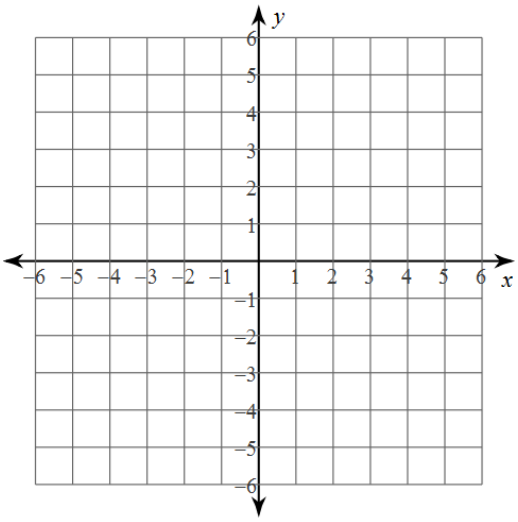
What are some important features of graphing a function and its inverse?

Find the inverse of each function. Then graph the function and its inverse. Graph the line y=x with a dotted line.

$$g(n) = \frac{1}{4}n - \frac{1}{4}$$



$$f(x) = -(x+1)^3$$



Apr 5-8:22 AM

Homework

Finish Inverse Functions Review WKS

Apr 5-8:24 AM