Math 3

Name: _____

Date: _____

Period: A1 A2 A3 B1 B2 B3

G_

LEARNING PLAN #6:
Inverses
(Chapter 5)

Skill / Understanding:	Review Problems:
Equations of Inverses ❑ I can write the equations of inverses by "undoing" (making a "do/undo table"). ❑ I can write the equations of inverses by interchanging the variables and solving for y (the "x-y interchange" method). ❑ I can verify my equations are inverses by substituting values. ❑ I can verify my equations are inverses by using composition of functions. (exemplary)	5-8(c), 5-26, 5-48, 5-84(d), and CL 5-97.
Graphs & Tables of Inverses ❑ I can create the inverse graph, given the graph of the original equation. ❑ I can create an inverse table, given a table of the original equation. ❑ I can determine if two equations are inverses by looking at their graphs. ❑ I can tell two equations are inverses by looking at their tables. ❑ I understand that all graphs of inverses must have the line of symmetry $y = x$. ❑ I understand how the domain and range of inverses are related.	5-8, 5-25, 5-32, 5-34, 5-70, and CL 5-99.
Context ❑ Given a situation of a relationship between two quantities, I can identify the inputs and outputs. ❑ Given the same situation, I can describe an inverse relationship.	

PRACTICE PROBLEMS

1) Solve each equation for *y*.

a. $2y^2 + 3y = 7$

b. $3(2x - y) + 12 = 4x - 3$

2) Write the inverse function for the following:

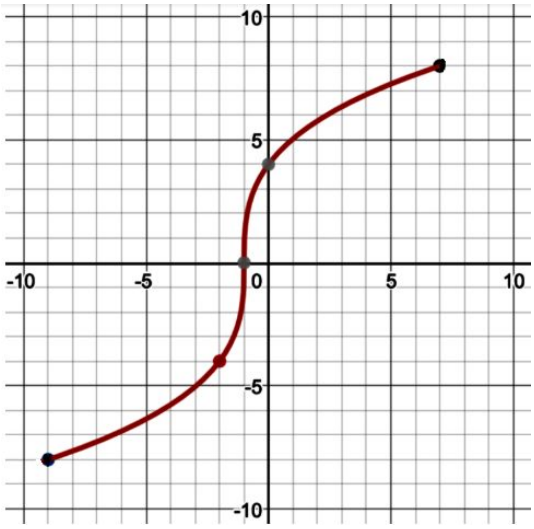
a. Given f(x) below, find $f^{-1}(x)$.

$$f(x) = 2\sqrt[3]{x+1} - 4$$

b. Given g(x), find $g^{-1}(x)$.

$$g(x) = \frac{x+2}{x}$$

3) Consider the graph of $k(x)$ below.



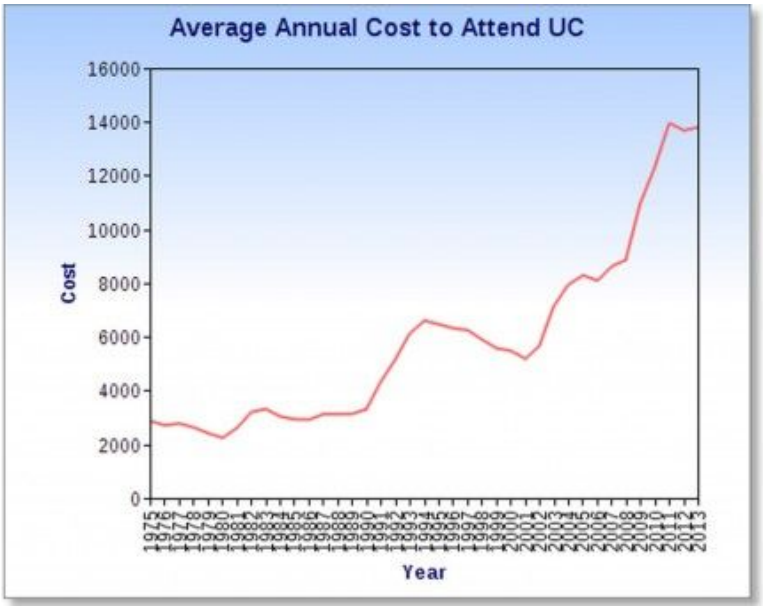
a. What are the domain and range for $k(x)$?

b. Graph the inverse $k^{-1}(x)$ on the same axes. Explain how the graphs of these two functions are related.

c. What are the domain and range of the inverse $k^{-1}(x)$?

d. Explain how the domain and range of inverse functions are related.

4) Examine the graph below:



a. What is the independent variable (input) in this relationship?

b. What is the dependent variable (output) in this relationship?

c. If you were to make an inverse graph to represent this relationship what would be the independent variable and dependent variable for the inverse?

d. If you were looking at the inverse graph for the average annual cost to attend UC and had an input of 10,000, approximate the output.

5) The table below represents a function, f(x). Use the table to calculate the following values. If you don't have enough information to determine these values, explain why.

a. f(3)
b. f(x) = -1
c. $f^{-1}(-2)$
d. $f^{-1}(6)$
e. $f^{-1}(x) = 0$

x	-1	0	1	2	3	4
f(x)	-3	-2	-1	6	25	62