

Name _____

Date _____

Unit 3: Exponential, Log, and Power Functions

Advanced Algebra

Inverse of Functions

I can find the inverse of a function. I can put functions in context.

Note: To find an inverse of a function you 1) Switch the x and y variables 2) Solve for y

Example: Given $y = 3x + 2$ Find the Inverse of the function

Use your calculator to fill in the table

F(x)

x	y
0	
1	
2	
3	

$f^{-1}(x)$ This is notation for Inverse

x	y

What do you notice about the table values? _____

So you can build an Inverse by switching the ordered pairs (x,y) to (y,x)

Now we will take 10 minutes to put an Inverse in context.....

Context: Write a scenario as to what the function $y = 3x + 2$ could represent. Be specific. Say exactly what the input could represent in real life. What would the 2 represent? What would the value of y represent. Be specific.

Write what the Inverse of the given function would represent. Again be specific. What would the input be and what would the output be.

Now you write a linear function in the form $y = mx + b$. Put your function in context. Some ideas from previous units involved money. Imagine you are saving for something big. This could be one idea.

My function is _____

It represents _____

My Inverse of my function is _____

It would represent _____

Class Practice: Find the inverse of the following linear equations. Use your calculator to show the tables are reversed. Copy 4 entries for each problem.

1) $y = 6 - 2x$

x	y

x	y

F(x)

$f^{-1}(x)$

2) $y = 2 - \frac{6}{x}$

x	y

x	y

3) $y = -6(x-2)$

x	y

x	y

4) $y = \frac{-6}{x-2}$

x	y

x	y

To do now in class: Find the inverse of the following functions.

1) $y = 2x - 3$

2) $3x + 2y = 4$

3) $x^2 + 2y = 3$

4) $y = 6 + \frac{2}{x}$

Use a composition of functions strategy or making two tables to verify if the following functions are inverses of each other.

5) $f(x) = 4x - 6$ and $g(x) = \frac{(x-6)}{4}$

6) $f(x) = 3x^2 + 2$ and $g(x) = \sqrt{\frac{(x-2)}{3}}$

