Friday, January 13 is the last day Ms. Hansen will accept any late/missing/extra credit work for 2nd quarter

-->This includes any test/quiz retakes

Questions on 4.5 HW? We are taking a quiz next class, and will work on a practice quiz soon...

Apr 8-8:30 AM

Practice Quiz

1. If the following points exist in $f(x)$, fill in what would they be in the inverse.
$f(x)$: $\{(-1,2), (-3,4), (-5,6)\}$

$f^{-1}(x)$: $\{(2,-1), (4,-3), (6,-5)\}$

2. If a linear function, f(x), has the slope $-\frac{7}{9}$, what would the slope be in the inverse, $f^{-1}(x)$?

$-\frac{9}{7}$ (reciprocal)

3. If the dependent variable in f(x) is feet, what is the independent variable in $f^{-1}(x)$?

feet

4. If the dependent variable in $f^{-1}(x)$ is perimeter, what is the independent variable in f(x)?

perimeter

5. If a function, f(x), has the following domain and range, fill in the domain and range for its inverse, $f^{-1}(x)$.

f(x) domain: $(-\infty, 4]$

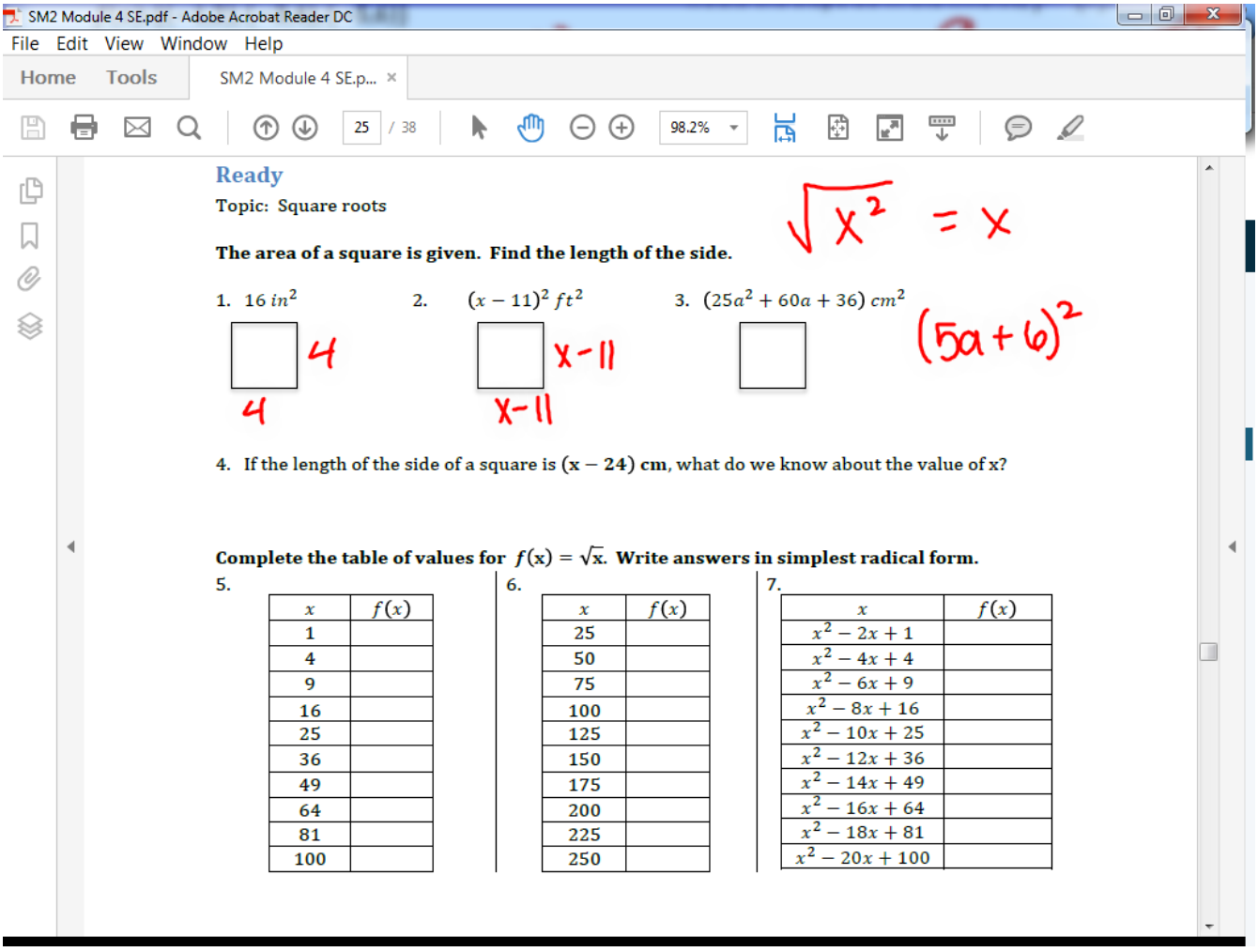
f(x) range: $(3, \infty)$

$f^{-1}(x)$ domain: $(3, \infty)$

$f^{-1}(x)$ range: $(-\infty, 4]$

6. A function, f(x), and its inverse, $f^{-1}(x)$, reflect across the special line y= X.

Jan 11-3:28 PM



Ready

Topic: Square roots

$\sqrt{x^2} = x$

The area of a square is given. Find the length of the side.

1. $16\ in^2$ 4

2. $(x-11)^2\ ft^2$ $x-11$

3. $(25a^2+60a+36)\ cm^2$ $(5a+6)^2$

4. If the length of the side of a square is $(x-24)$ cm, what do we know about the value of x?

Complete the table of values for $f(x)=\sqrt{x}$. Write answers in simplest radical form.

5.

x	$f(x)$
1	
4	
9	
16	
25	
36	
49	
64	
81	
100	

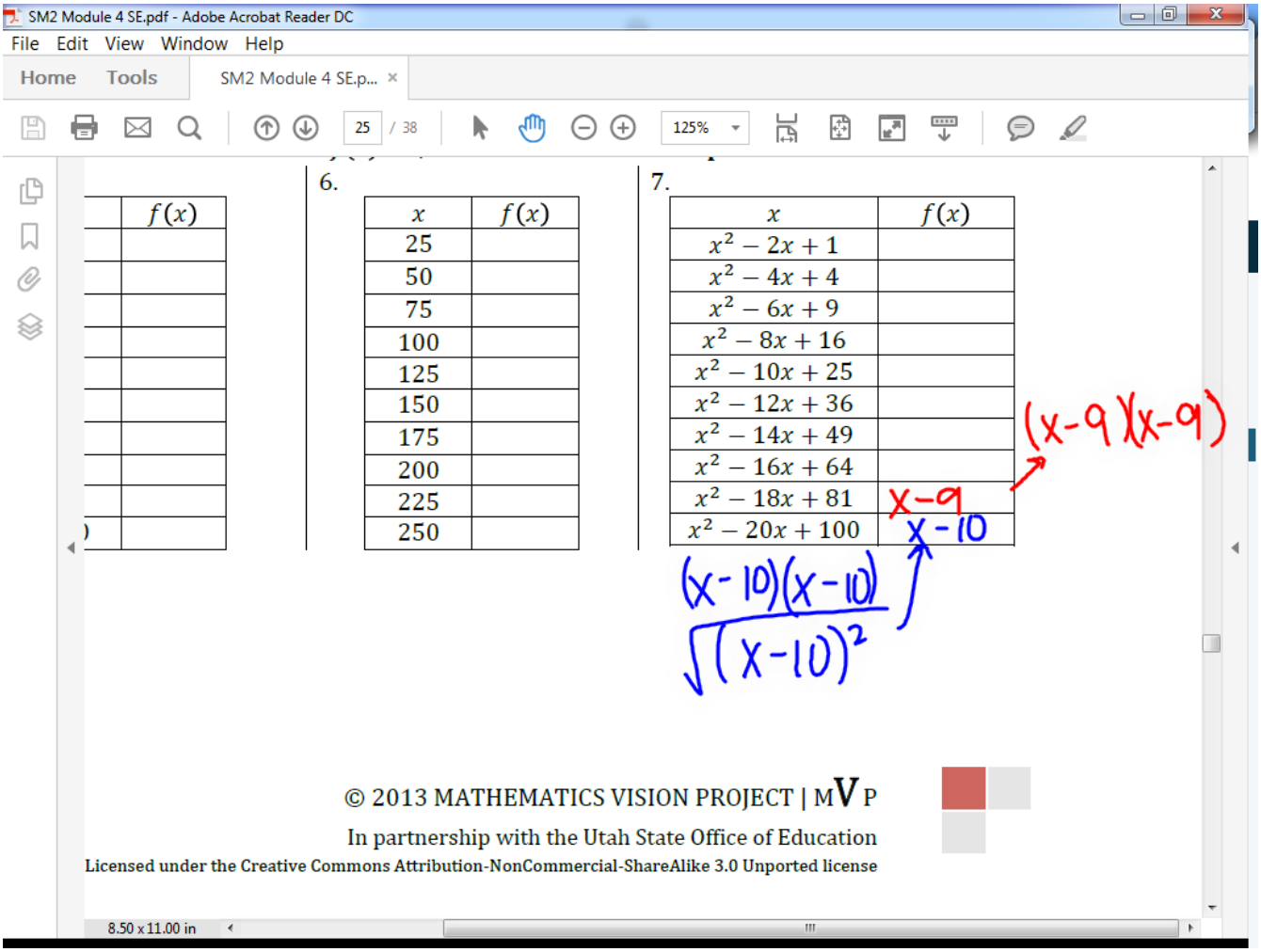
6.

x	$f(x)$
25	
50	
75	
100	
125	
150	
175	
200	
225	
250	

7.

x	$f(x)$
x^2-2x+1	
x^2-4x+4	
x^2-6x+9	
$x^2-8x+16$	
$x^2-10x+25$	
$x^2-12x+36$	
$x^2-14x+49$	
$x^2-16x+64$	
$x^2-18x+81$	
$x^2-20x+100$	

Jan 12-12:13 PM



Jan 12-12:15 PM

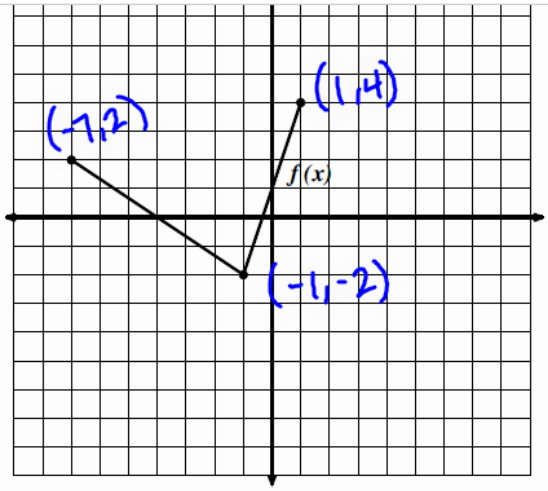
SM2 Module 4 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM2 Module 4 SE.p... ×

26 / 38 125%

10. Is the graph of $f^{-1}(x)$ also a function? Justify your answer.



11. I am going on a long trip to Barcelona, Spain. I am only taking one suitcase and it is packed very full. I plan to arrive completely exhausted at my hotel in the middle of the night. The only thing I will want to take out of my suitcase is a pair of pajamas. So when I packed my suitcase at home, did I want to put my pajamas in first, somewhere in the middle, or last? Explain.

8.50 x 11.00 in

Jan 12-12:16 PM

SM2 Module 4 SE.pdf - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools SM2 Module 4 SE.p... ×

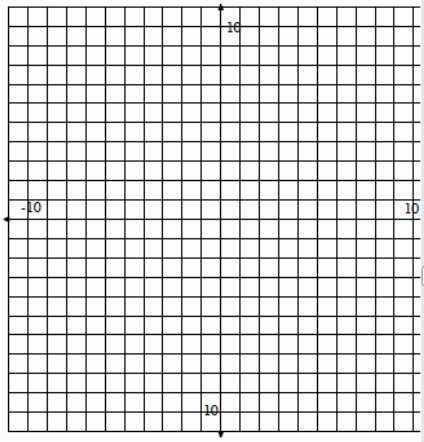
27 / 38 125%

12. Write the inverse function for the table of values.

Input x	-10	-6	-2	2	6
Output $g(x)$	-2	-1	0	1	2

Input x	-2	-1	0		
Output $g^{-1}(x)$	−10	−6	−2		

13. Use the points in problem 12. Graph $g(x)$ in black and $g^{-1}(x)$ in a different color on the coordinate grid at the right. Graph the line of reflection for the corresponding points.



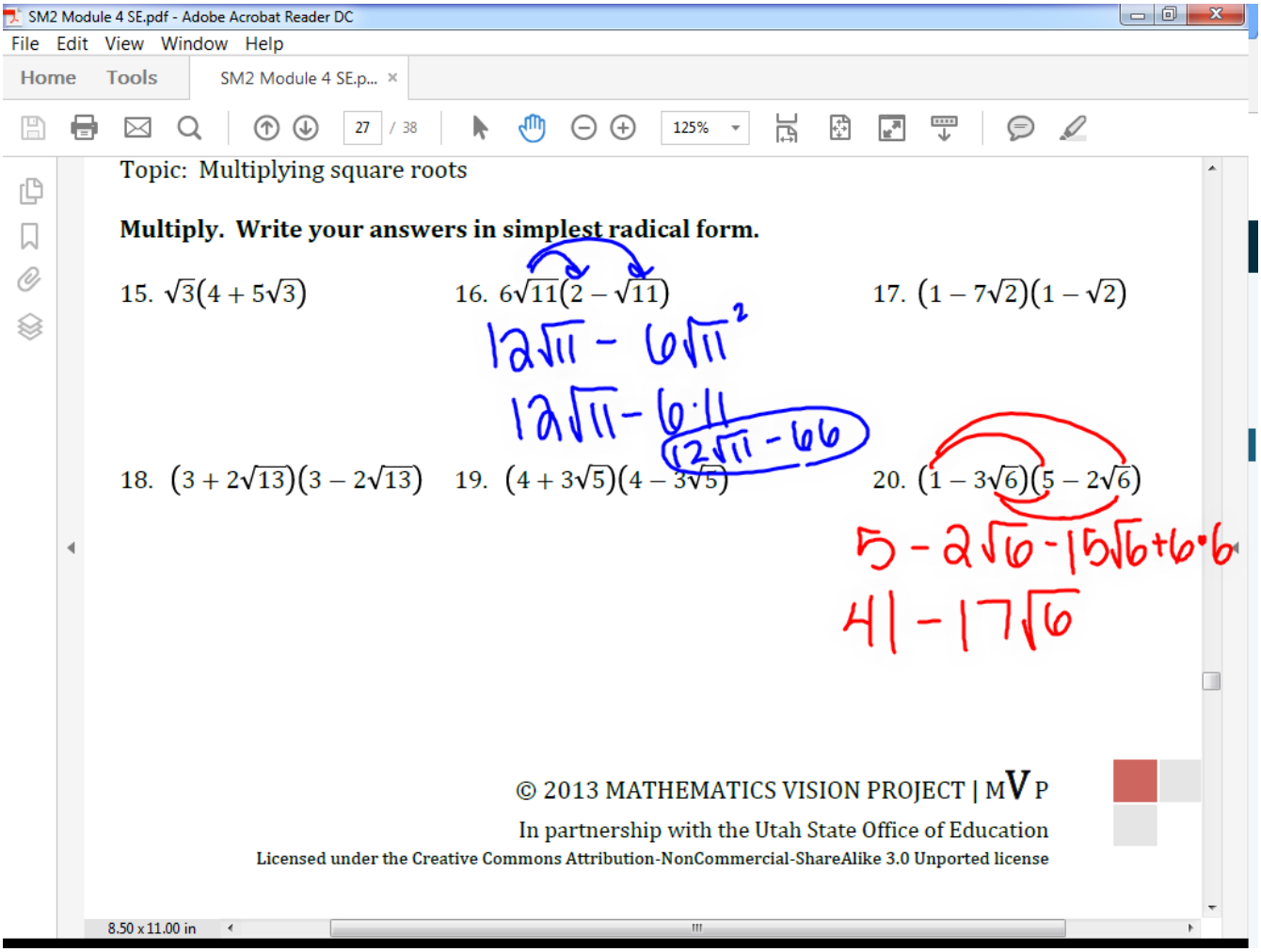
14. Is $g^{-1}(x)$ also a function? Justify your answer.

Go

Topic: Multiplying square roots

8.50 x 11.00 in

Jan 12-12:18 PM



Jan 12-12:21 PM

4.6 Bernie's Bikes

A Solidify Understanding Task

Bernie owns *Bernie's Bike Shop* and is advertising his company by taking his logo and placing it around town on different sized signs. After creating a few signs, he noticed a relationship between the amount of ink he needs for his logo and the size of the sign.

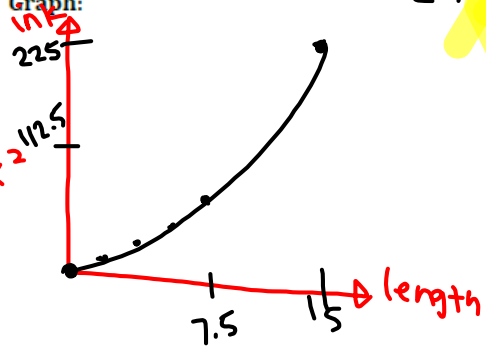
1. The table below represents some of the signs Bernie has created and the relationship between the amount of ink needed versus the size of the sign. Complete the information below to help Bernie see this relationship (don't forget to label your graph).

ind. x dep. y

Length of sign (in feet)	Ink needed (in ounces)
3	9
4	16
2	4
15	225
x	$x \cdot x$ or x^2
0	0

Function: quadratic Domain: [0, 15] Range: [0, 225]

Graph:

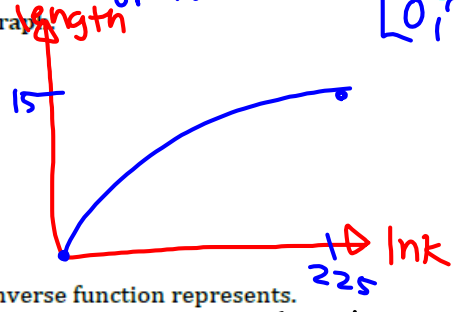


2. Using question 1, complete the information below for the *inverse* of this function (don't forget to label your graph).

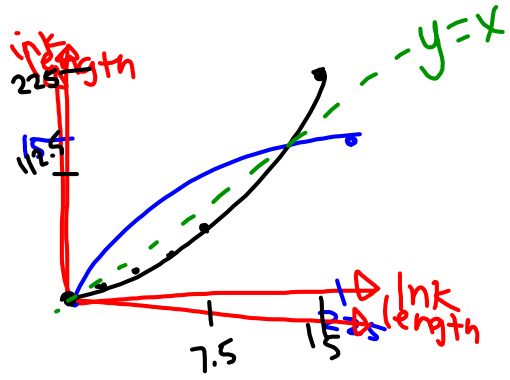
ind. x	dep. y
Ink	length
9	3
16	4
4	2
225	15
x	$\sqrt{x}$

Function: square root or radical Domain: [0, 225] Range: [0, 15]

Graph:



3. Explain in words what the inverse function represents.



- Functions & their inverses are reflections across the line $y = x$.
- The domain in a function becomes the range in its inverse, and the range in a function becomes the domain in its inverse.

Jan 9-1:44 PM

Part II

Determine the inverse for each function, then sketch the graphs and state the domain and range for both the original function and it's inverse.

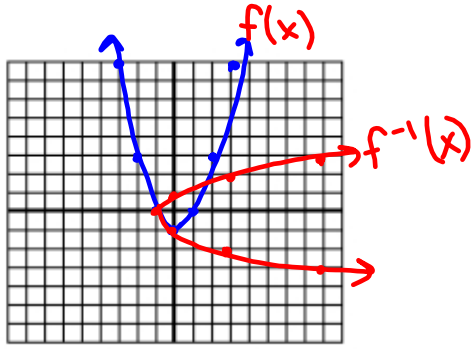
4. $f(x) = x^2 - 1$; $f^{-1}(x) = \pm\sqrt{x+1}$

Domain: $(-\infty,\infty)$ Domain: $[-1,\infty)$

Range: $[-1,\infty)$ Range: $(-\infty,\infty)$

① switch x & y

② Solve for y. $x = y^2 - 1$, $+1 \quad +1$, $\sqrt{x+1} = \sqrt{y^2}$, $\pm\sqrt{x+1} = y$



5. $g(x) = 3x + 2$; $g^{-1}(x) = \frac{x-2}{3}$

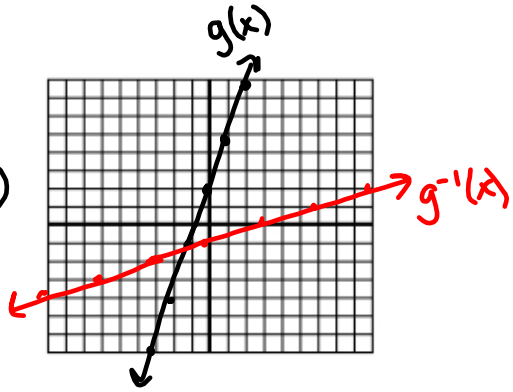
Domain $(-\infty,\infty)$ Domain: $(-\infty,\infty)$

Range: $(-\infty,\infty)$ Range: $(-\infty,\infty)$

① $x = 3y + 2$

② $-2 \quad -2$, $\frac{x-2}{3} = \frac{3y}{3}$

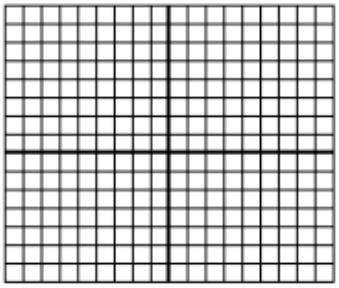
$\frac{x-2}{3} = y$ or $\frac{1}{3}x - \frac{2}{3}$



6. $f(x) = (x+3)^2$; $f^{-1}(x) =$

Domain: Domain:

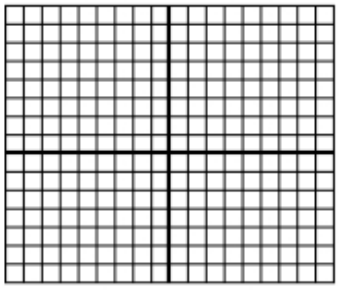
Range: Range:



7. $f(x) = x^3$; $f^{-1}(x) = \sqrt[3]{x}$

Domain: Domain:

Range: Range:



Homework

Finish 4.6 "Ready, Set, Go"

Mar 28-9:36 AM