

Homework Answers

pg 356 - 358:

4. $\{(3, -1), (5, 2), (5, -3), (0, 2)\}$

56. $f^{-1}(x) = -x + 7$

59. $f^{-1}(x) = (4 - 7x)/x$

$f(x)$: D: $\{x|x \neq -7\}$

R: $\{y|y \neq 0\}$

$f^{-1}(x)$: D: $\{x|x \neq 0\}$

R: $\{y|y \neq -7\}$

61. $f^{-1}(x) = (3x+4)/(x-1)$

$f(x)$: D: $\{x|x \neq -4/3\}$

R: $\{y|y \neq 1\}$

$f^{-1}(x)$: D: $\{x|x \neq 1\}$

R: $\{y|y \neq -4/3\}$

Work on Warm-Up in Today's Notes

78 & 80 see graph

92. $f^{-1}(x) = (-x - 3)/x$

$f(x)$: D: $\{x|x \neq -1\}$

R: $\{y|y \neq 0\}$

$f^{-1}(x)$: D: $\{x|x \neq 0\}$

R: $\{y|y \neq -1\}$

96. $f^{-1}(x) = (2x+1)/(1-x)$

$f(x)$: D: $\{x|x \neq -2\}$

R: $\{y|y \neq 1\}$

$f^{-1}(x)$: D: $\{x|x \neq 1\}$

R: $\{y|y \neq -2\}$

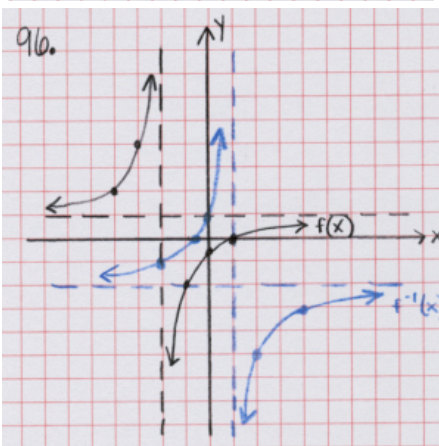
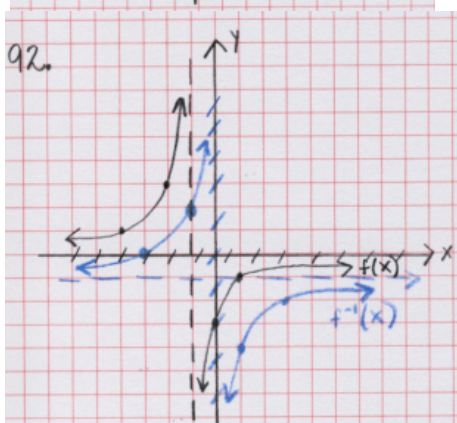
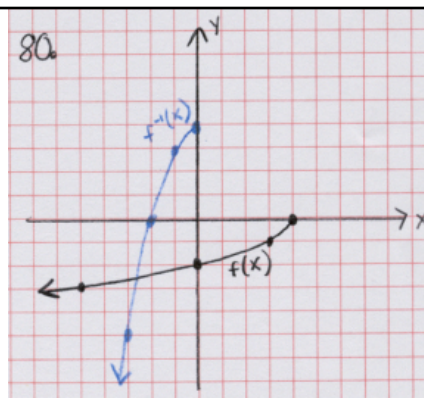
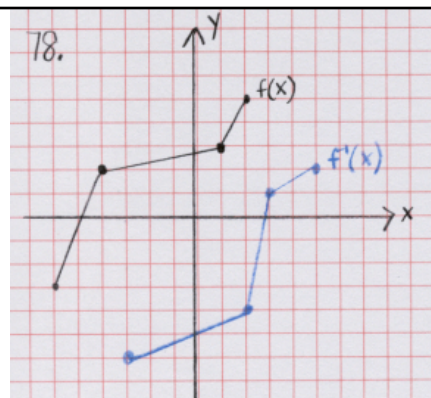
OMIT: 44, 48 & 60
from tonight's HW

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

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

$$= \frac{x+3}{-x}$$

Nov 9-3:33 PM



Nov 9-3:52 PM

Exponential Functions

Nov 10-9:59 AM

Warm-Up: Find the inverse algebraically.

1. $f(x) = \frac{1}{x-1}$

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

Nov 9-10:21 AM

Warm-Up: Find the inverse algebraically.

1. $f(x) = \frac{1}{x-1}$ $D: x \neq 1$
 $R: y \neq 0$

$$x = \frac{1}{y-1}$$

$$xy - x = 1 \quad \leftarrow$$

$$xy = x + 1 \quad | = x(y-1)$$

$$y = \frac{x+1}{x} \quad \frac{1}{x} = y-1$$

$$f^{-1}(x) = \frac{x+1}{x} \quad y = \frac{1}{x} + \frac{x}{x}$$

$$D: x \neq 0 \quad y = \frac{1}{x} + \frac{x}{x}$$

$$R: y \neq 1 \quad y = \frac{x+1}{x}$$

2. $f(x) = \frac{3x-4}{2x+1}$ $D: x \neq -\frac{1}{2}$
 $R: y \neq \frac{3}{2}$

$$x = \frac{3y-4}{2y+1}$$

$$2xy + x = 3y - 4$$

$$2xy - 3y = -x - 4$$

$$y(2x-3) = -x-4$$

$$y = \frac{-x-4}{2x-3}$$

$$f^{-1}(x) = \frac{-x-4}{2x-3} \quad \text{OR} \quad f^{-1}(x) = \frac{x+4}{3-2x}$$

$$D: x \neq \frac{3}{2}$$

$$y \neq -\frac{1}{2}$$

Nov 9-10:21 AM

Graph $y = 2^x$

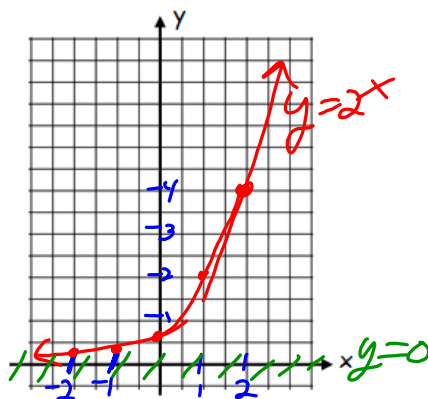
use 5 points

x	-2	-1	0	1	2
y	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4

$$D: \{x | x \in \mathbb{R}\} \quad (-\infty, \infty)$$

$$R: \{y | y > 0\}$$

$$2^{-2} = \frac{1}{2^2} = \frac{1}{4}$$



Nov 9-10:24 AM

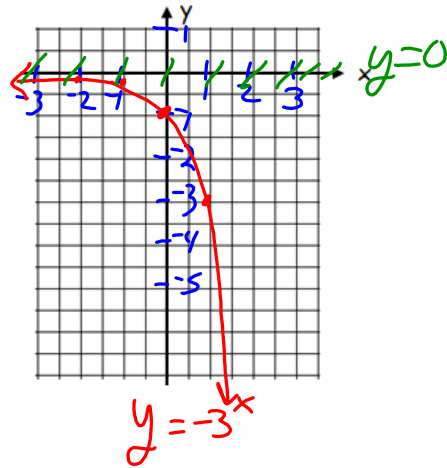
Graph $y = -3^x$

x	-2	-1	0	1	2
y	$-\frac{1}{9}$	$-\frac{1}{3}$	-1	-3	-9

D: $\{x \mid x \in \mathbb{R}\}$

R: $\{y \mid y < 0\}$

$$\begin{aligned} -3^0 &= -(3)^0 = -1 \\ -3^1 &= -(3) = -3 \end{aligned}$$



Nov 9-10:24 AM

List the transformation(s) needed to transform $h(x) = 2^x$ into the graph of the given function:

1. $f(x) = 2^x - 5$
vertical shift down 5

2. $f(x) = 2^{x+2} - 5$
vertical shift down 5
horizontal shift left 2

3. $f(x) = -2^x + 1$
x-axis
vertical shift up 1

4. $f(x) = 2^{-x} - 4$
y-axis
vertical shift down 4

5. $f(x) = 3 \cdot 2^{x+1}$
horizontal shift left 1
vertical stretch of 3

6. Write the $f(x)$ which is $h(x)$ translated up 2 and left 3.

$$h(x) = 2^x$$

$$f(x) = 2^{x+3} + 2$$

Nov 9-10:24 AM

pg 357 : 62

find the inverse

$$f(x) = \frac{5x-3}{2x+1}$$

pg 370 - 371 :

14. $f(x) = 3^{-x}$

17. $y = -2^x$

} Graph on
Graph Paper
w/ tables

27-32 State Transformations from

27. $f(x) = 2^{x+1}$ $f(x) = 2^x$

28. $f(x) = 2^{x-1}$

29. $f(x) = 2^x - 3$

30. $f(x) = 2^x + 1$

31. from $f(x) = 3^x : f(x) = 4 - 3^{-x}$

32. $f(x) = 2^{x-1} - 3$

Nov 5-2:17 PM

Nov 9-10:25 AM