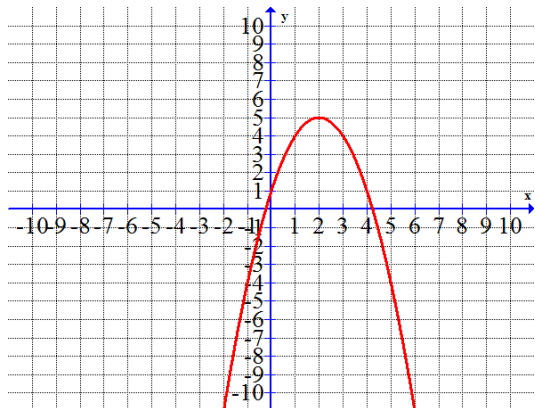


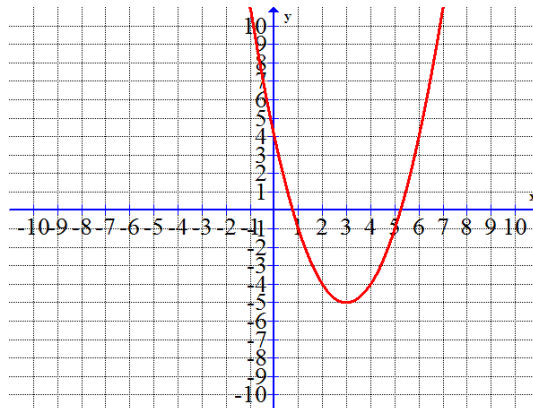
Section 6.2: One-to-one functions; inverse functions

#1 - 4: Determine if the functions are one to one by using the horizontal line test.

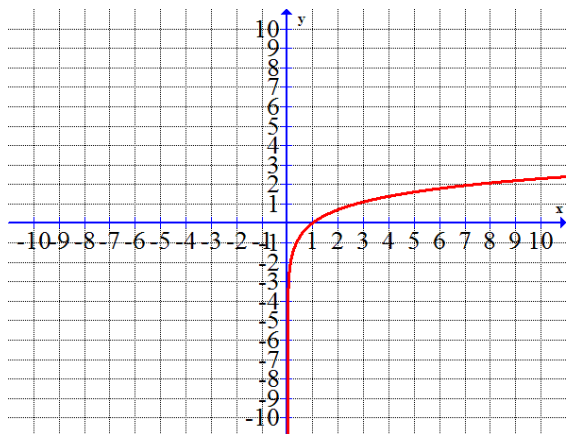
1)



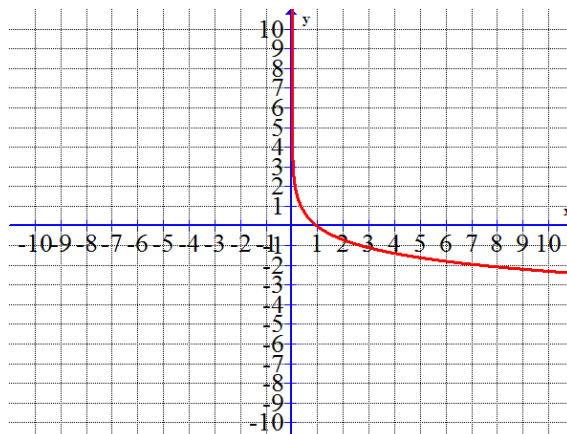
2)



3)



4)



#5 - 12: Use a graphing calculator to sketch a graph and determine whether the function is one to one or not.

5)  $f(x) = 2x - 5$

6)  $g(x) = x + 3$

7)  $f(x) = x^2 - 3$

8)  $k(x) = (x-3)^2 + 6$

9)  $g(x) = x^4$

10)  $k(x) = x^4 - 3$

11)  $f(x) = x^3$

12)  $h(x) = x^3 - 2$

#13 - 18: Determine which of the functions are one to one. If a function is one to one find its inverse.

13)  $f = \{(0,1) (1,4) (2,4) (3,5)\}$

14)  $g = \{(3,2) (4,5) (-3,4) (1,5) (0,6)\}$

15)  $h = \{(0,3) (5,1) (7,11) (9, -3)\}$

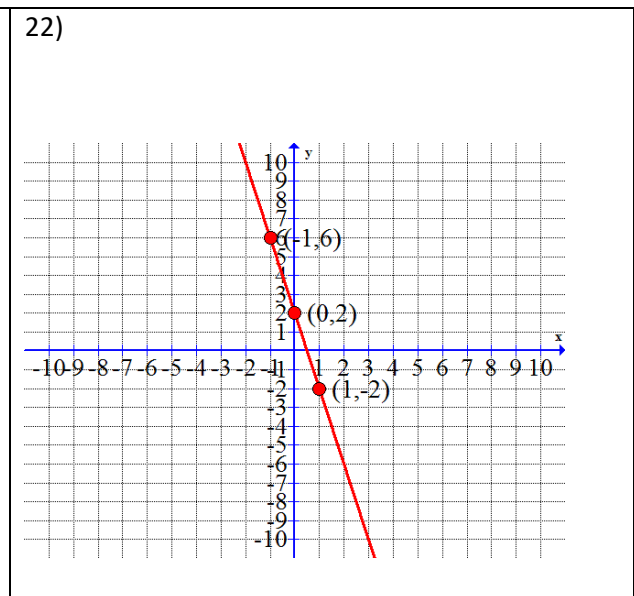
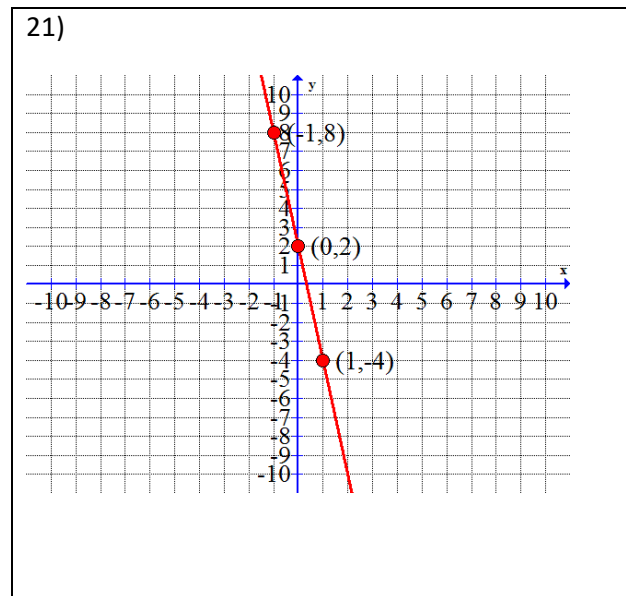
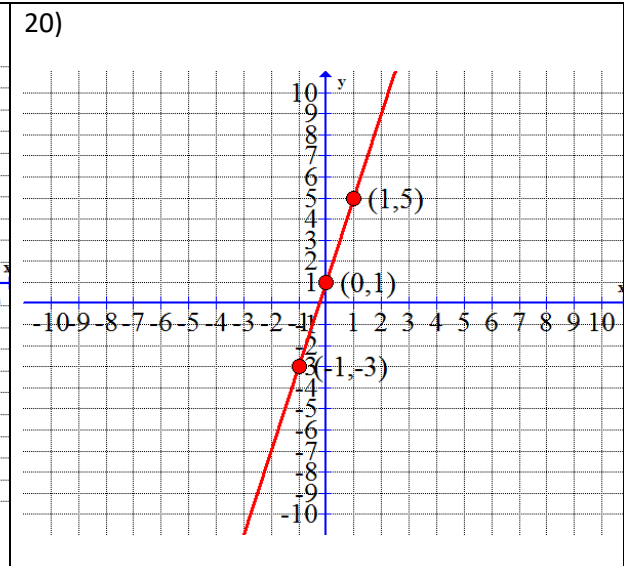
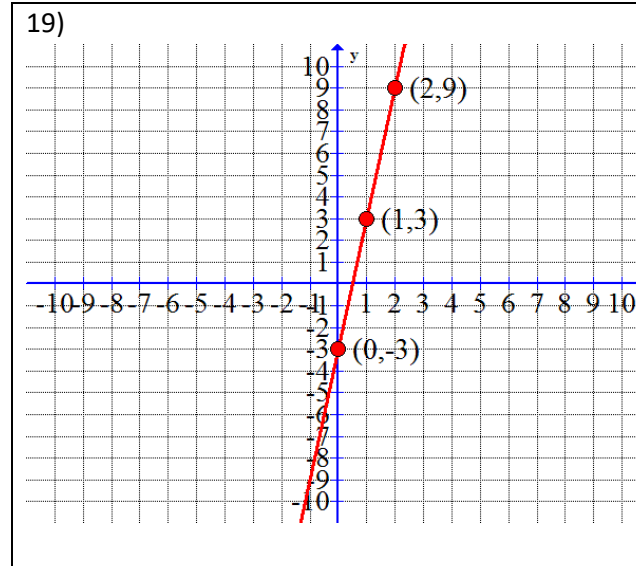
16)  $k = \{(-3,4) (-5,6) (9, -3) (4, 0)\}$

17)  $m = \{(0,2) (2,3) (3, 5)\}$

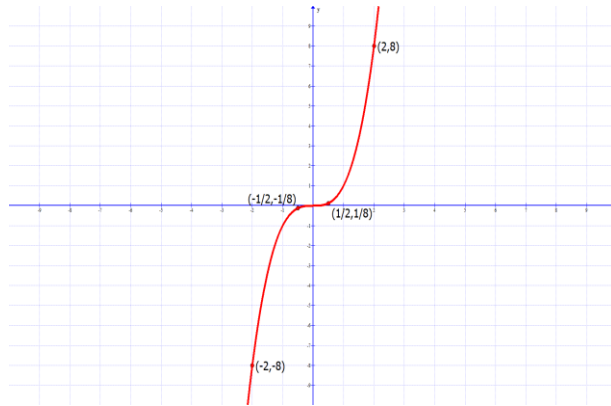
18)  $n = \{(1,1) (2,2) (3,4) (5,5)\}$

#19 – 26: The graph of a one to one function “ $f(x)$ ” is given.

Draw the graph of the inverse function  $f^{-1}(x)$

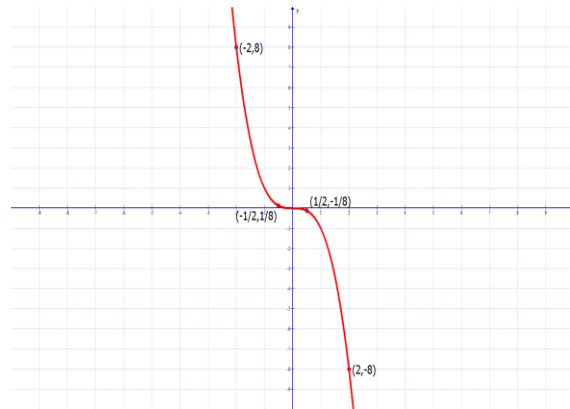


23)



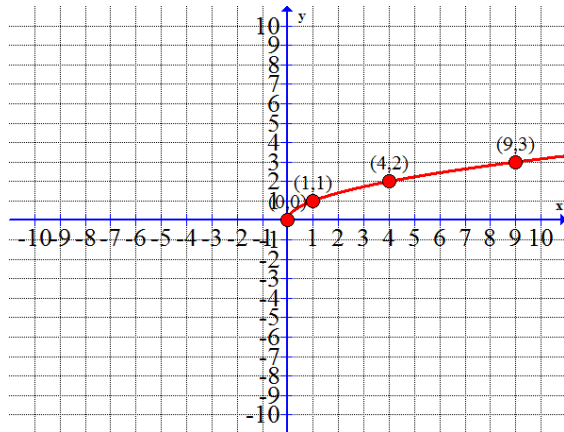
The points marked are  
 $(2, 8)$   $(1/2, 1/8)$   
 $(-1/2, -1/8)$   $(-2, -8)$

24)

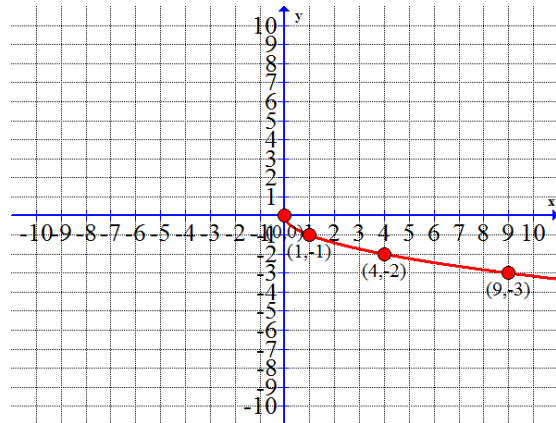


The points marked are  
 $(-2, 8)$   $(-1/2, 1/8)$   
 $(1/2, -1/8)$   $(2, -8)$

25)



26)



Section 6.2: One-to-one functions; inverse functions

#27 - 36: Each of the following functions is one to one. Perform the following:

- Find the inverse of each function, and express it using appropriate notation.
- Check your answer by showing that  $(f \circ f^{-1})(x) = x$  or  $(f^{-1} \circ f)(x) = x$
- Use your calculator to graph the function and its inverse and the line  $y = x$  on the same coordinate axis. This is just a visual test to confirm you have calculated the correct inverse.

27)  $f(x) = 2x - 4$

28)  $f(x) = 3x - 6$

29)  $f(x) = \frac{x-2}{3}$

30)  $f(x) = \frac{2x-5}{7}$

31)  $f(x) = \frac{2}{x}$

32)  $f(x) = \frac{3}{x}$

33)  $f(x) = \sqrt[3]{x-4}$

34)  $f(x) = \sqrt[3]{x-2}$

35)  $f(x) = x^3 + 2$

36)  $f(x) = x^3 - 3$