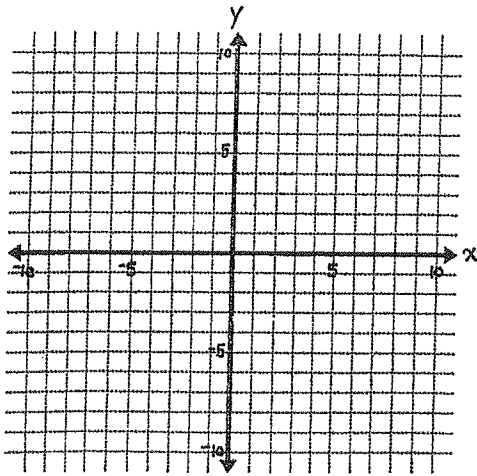


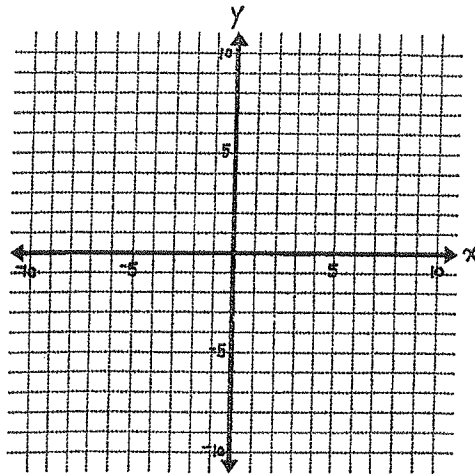
## Function Overview Worksheet - Algebra 2

Graph the following functions,  $y = f(x)$ . Use TI-83 graphing calculator. Before you start, 'Reset Defaults' [2nd] [MEM] 722 (522) and then [ZOOM], ZSquare. Enter functions at [Y=]. Finally, [GRAPH].

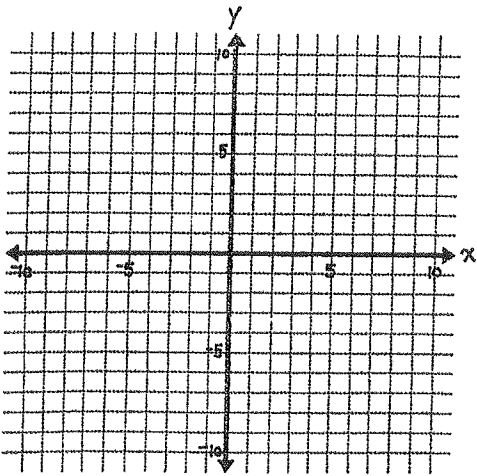
1.  $f(x) = x^2/5$  (use [X T  $\theta$ ] button for  $x$ )



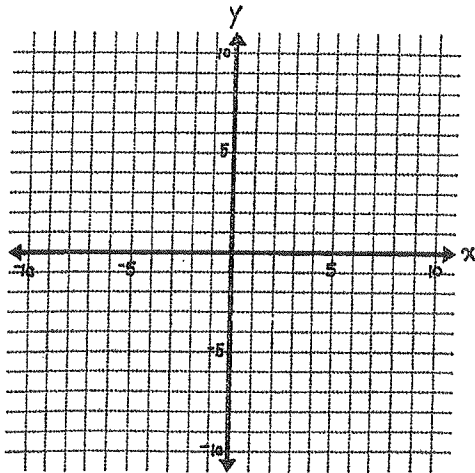
2.  $f(x) = \sqrt{5x}$



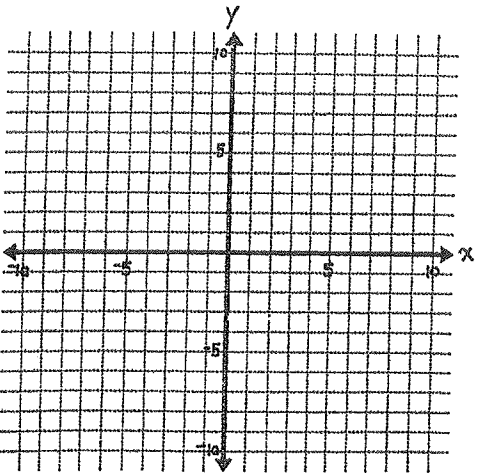
3.  $f(x) = x^3/20$  (use  $x$  [^] 3)



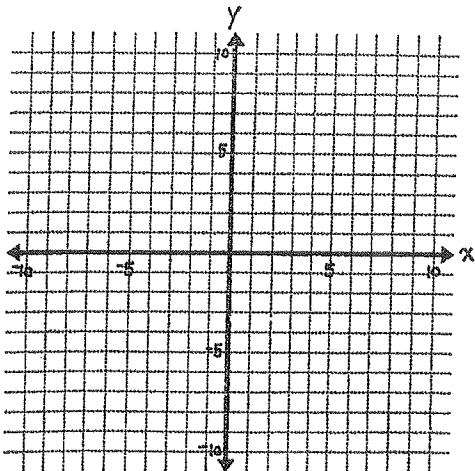
4.  $f(x) = \sqrt[3]{20x}$  (use [MATH] MATH Cube Root)



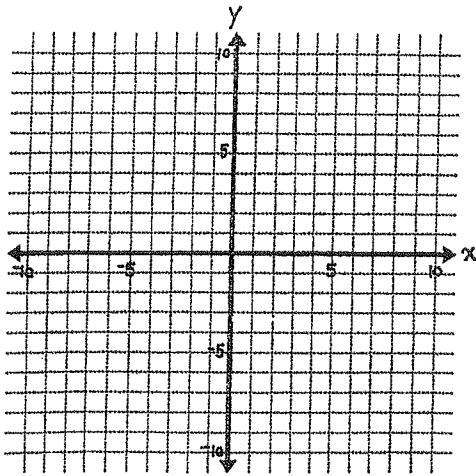
5.  $f(x) = x^4/100$



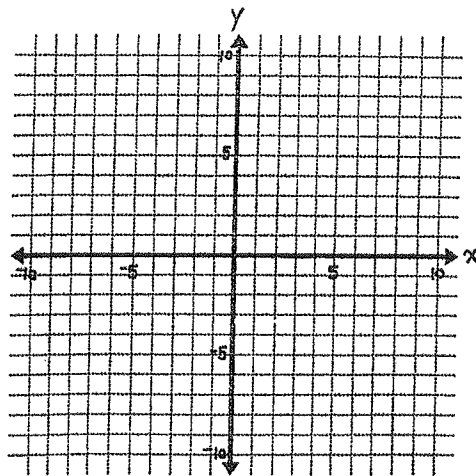
6.  $f(x) = x^5/100$



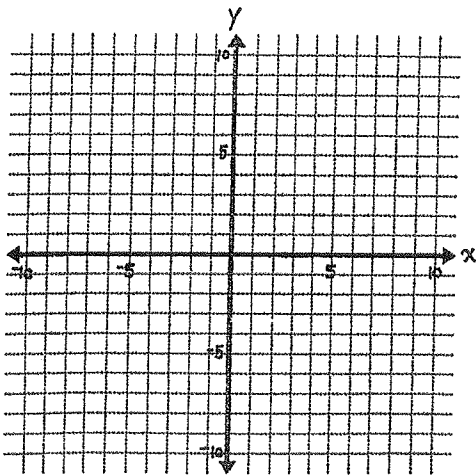
7.  $f(x) = 1$



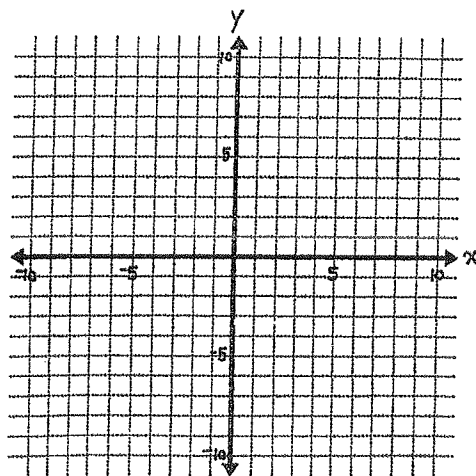
8.  $x = 1$  (Is this a function? Can calculator graph it?)



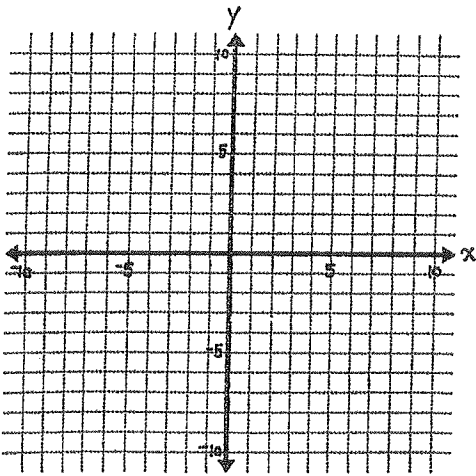
9.  $f(x) = x$



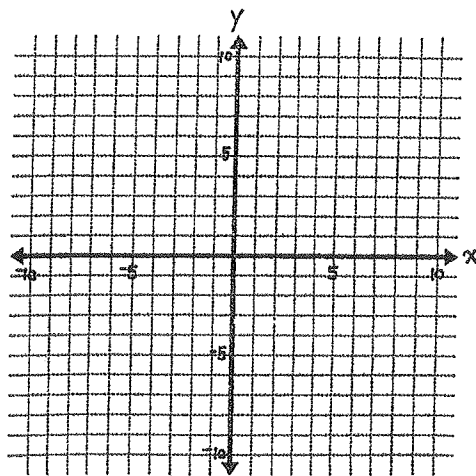
10.  $f(x) = 10/x$



11.  $f(x) = 4 \times 10^{(x/20)}$  (use [2nd] [LOG] key)



12.  $f(x) = 20 \times \log(x/4)$



13. You have graphed the inverses, called  $f^{-1}(x)$ , of many functions,  $f(x)$ , above. They satisfy  $f^{-1}(f(x)) = x$ .

(a) Which of the above graphs 1-12 are **pairs** of function and inverse function? \_\_\_\_\_.

(b) Which of the above graphs 1-12 are their own inverses? \_\_\_\_\_.

(c) Which two functions don't have a graph of their inverses? \_\_\_\_\_. What are their inverses? \_\_\_\_\_.

**Help on inverses:** to find an inverse, switch  $x$  and  $y$  and solve for the new  $y$ . Or reflect the graph about  $y = x$  (45 degree line). For example,  $y = f(x) = 2x + 4$  becomes  $x = 2y + 4$ . Solve for  $y$ ,  $2y = x - 4$  and  $y = f^{-1}(x) = 0.5(x - 4) = 0.5x - 2$ . So  $2x + 4$  and  $0.5x - 2$  is a **pair** of function and inverse function.