

Pre-calculus Ch. 1 Review

- Evaluate $f(x) = 10x^2 - \sqrt{-3x}$; $f(-3)$
- Find the inverse. $f(x) = (x+7)^2 - 4$
- Are the following functions inverses? If not what is the inverse of the 1st function? $f(x) = 5x - 1$ $g(x) = \frac{1}{5}x + \frac{1}{5}$
- Describe the transformations: $f(x) = -\frac{13}{5}(x+7)^2 + 15$.
- Marge plans to decorate shirts to sell at a crafts fair. The decorations cost \$3.00, and the shirts cost \$8.00 each. Let x be the # of shirts.
 (a) Write the cost of the project as a function of x
 (b) Determine the cost of decorating 45 shirts
 (c) How many shirts can be decorated with a budget of 15439?
- Determine whether the function is even, odd, or neither. $f(x) = 6x^5 - 3x^3 - x$
- Find the domain & range of the function. $f(x) = \sqrt{81-x^2}$
- What line is a function reflected over to obtain the inverse?
- If $f(x) = 2+6x$ and $g(x) = 2x^2 - 4$, find (a) $(g \circ f)(x)$ & (b) $(f \circ g)(x)$
- Find the domain of the function $\frac{x^2 - 3x - 10}{x^2 + 5x - 36}$
- Find the domain & range of the function. $f(x) = -3x^2 + 5$
- Sketch a sample graph of: (a) Quadratic Function (b) Cubic Function (c) Abs. value Function
- Find the inverse of f . $f(x) = \frac{2}{3}x$. Verify that $f(f^{-1}(x)) = x$ & $f^{-1}(f(x)) = x$
- Find any relative minimum or maximum values. Round to 2 decimal places
 $y = 3x^3 + 7x^2 - 34x + 15$
- Find $(f \circ g)(x)$ for $f(x) = 2x^2 - 4x^2 + 3x - 2$ and $g(x) = (3 - 5x - x^2)$
- $f(y) = x^3$ but has more limits left & 5 units down
 Given $f(x) = \begin{cases} 2x^2 - 9, & x < 1 \\ 3, & 1 \leq x \leq 4 \\ \frac{2}{7}x - 3, & x > 4 \end{cases}$ (a) Graph the function (b) State where the function is incr, decr and constant
- Are the following equations functions?
 (a) $x = 18$ (b) $5x^2 + 4y^2 = 3$ (c) $x = y^3$ (d) $6y^2 + y = 5$ (e) $y = 7$
- Find the domain & range of the function $f(x) = 9|x+3|$

- Find $(\frac{f}{g})(-7)$ if $f(x) = 2x^2 - 8x + 7$ & $g(x) = 3x^3 - 7x + 10$
 (a) $f(x) = 7\sqrt{x} + 6$, $g(x) = -2\sqrt{x} - 4$. Find $(\frac{f}{g})(x)$ & state the domain
- What is the transformation of $f(x)$ to $f(-x)$
- Determine the intervals on which the function is incr, decr, or constant
- Find $(f+g)(x)$ & $(f \circ g)(x)$ $f(x) = x^2 + 3x - 4$ $g(x) = 2x^2 - 6x + 5$
- $f(x) = \begin{cases} 3x+7 & x \leq 3 \\ 4-2x^2 & x > 3 \end{cases}$ Evaluate (a) -3 (b) 0 (c) 5 (d) 3 (e) $4/9$
- Write an equation of an even function.
- Find the inverse of the function $f(x) = \frac{x+2}{5}$
- Use the horiz. line test to test if the following functions are one-to-one
 (a) (b) (c)
- Find the inverse of f . Verify $f(f^{-1}(x))$ & $f^{-1}(f(x))$ $f(x) = x^2$
- Are the following functions?
 (a) (b)
- If $f(x) = 7x - 3$ & $g(x) = 2x + 13$ find $(f \circ g)(-5)$
- Find $(f \circ g)(x)$ for $f(x) = x^2 + 9$ & $g(x) = 3 - 2x$
- If $f(x) = x^2 - x + 1$, determine $\frac{f(5+h) - f(5)}{h}$, $h \neq 0$.
- If $f(x) = -3\sqrt{5x}$ and $g(x) = 5x - 1$, find $(f \circ g)(x)$
- Write an equation that represents a vertical compression of $f(x) = |x|$
- Write the function that represents the graph
- Evaluate $h(x) = \frac{x^2 + 13}{2x}$, $h(2 + 2)$
- Write the inverse of $f = \{(5, -8), (6, 3), (0, 1), (9, -4)\}$
- If $f(x) = 3x + 1$ & $g(x) = 4x^2 - 7$ determine $(\frac{f}{g})(8)$
- Find the coordinate of a 2nd point on the graph of the function if the given point $(7, -6)$ is on the graph & the function is (a) Even (b) odd