College Algebra
Chapter 2 Test

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1. Evaluate a Function

Given $f(x) = x^2 + 8x - 1$, find: a) $f(-2)$ b) $f(5x-1)$	Given $f(x) = \dfrac{3x-5}{4x+2}$, find: a) $f(3)$ b) $f(x+3)$

2. Evaluate a Piecewise Function

Given: $f(x) = \begin{cases} \lvert x+3 \rvert, x \le 0 \\ 9x-1, x > 0 \end{cases}$, find: a) $f(-10)$ b) $f(9)$ c) $f(0)$	Given: $f(x) = \begin{cases} x^2 - 3x, x \le 2 \\ 5x-1, x > 2 \end{cases}$, find: a) $f(8)$ b) $f(2)$ c) $f(-1)$

3. Determine if a function is even, odd, or neither

Determine if the following function is even, odd, or neither (no guessing, if your "why" is not correct, you will not receive credit): $f(x) = \lvert x^3 - x \rvert$	Determine if the following function is even, odd, or neither (no guessing, if your "why" is not correct, you will not receive credit): $f(x) = \dfrac{1}{x} - x^3$

4. Find the slope of the line segment that falls between the points (-5, -2) and (-12, -4)

5. Find the equation of the line that falls between the points (-8, 3) and (-5, -10)

6. Find the equation of the line that passes through a point and is either parallel or perpendicular to a line

Find the equation of the line that passes through the point (-4, 1) and is perpendicular to $3x - 4y = 2$	Find the equation of the line that passes through the point (-2, -5) and is parallel to $9x + y = 3$

7. Describe the transformation from the basic graph:

Describe the transformation from the basic graph to $f(x) = (x+3)^2 - 4$	Describe the transformation from the basic graph to $f(x) = -\lvert x-2 \rvert + 5$

8. Find the domain of the following functions:

a) $f(x) = \dfrac{3x+2}{x^2 - 9x + 18}$

b) $f(x) = \sqrt{3x+8}$

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9. Find the composition of two functions:

Given $f(x) = x^2 - 3x - 2$ and $g(x) = x - 5$, find: a) $f \circ g$ b) $g \circ f$	Given $f(x) = 11x - 1$ and $g(x) = 3x + 7$, find: a) $f \circ g$ b) $g \circ f$

10. Find the inverse of a function:

Find the inverse of $f(x) = \frac{1}{9}x - 2$	Find the inverse of $f(x) = \sqrt[3]{4x - 1}$