Pre-Calculus Honors Name:_____

Unit 1 Functions Test Review 2016

Section 1.2 Functions and Their Properties

1. Determine if the following functions are even, odd, or neither.

a) $f(x) = x^3 - 4x$

b) $f(x) = x^5 + 7x^2 - 3x + 5$

c) $f(x) = \frac{1}{x^4+6}$

d) $f(x) = \frac{x}{x^2+1}$

2. Find the Domain, Range, and Asymptote(s) for the following functions:

a) $f(x) = \frac{1}{x+3}$ b) $f(x) = \frac{2x}{x+3}$

3. State the end behavior and boundness for the following:

a) $f(x) = x^3 - 5x$

b) $f(x) = \frac{2x^2-9}{x^2-9}$

4. Find the extremas and state the intervals of increasing/decresing for the function $f(x) = x^4 - 2x^2 - 8$

Section 1.4 Building Functions from Functions

1. Find the composites for the following:

If $f(x) = -4x + 2$ and $g(x) = \sqrt{x-8}$, find $(f \circ g)(12)$

Given $f(x) = 2x - 5$ and $g(x) = x + 2$, find $(f \circ g)(x)$

If $f(x) = -2x + 1$ and $g(x) = \sqrt{x^2 - 5}$, find $(g \circ f)(2)$

Given $f(x) = 4x + 3$ and $g(x) = x^2$, find $(g \circ f)(x)$

2.

For each function h given below, decompose h into the composition of two functions f and g so that $h = f \circ g$.

(a) $h(x) = (x+5)^2$

(b) $h(x) = \sqrt[3]{5x^2+1}$

(c) $h(x) = 2^{\cos x}$

(d) $h(x) = \cos(2^x)$

(e) $h(x) = \dfrac{\sqrt{x^2+1}-1}{\sqrt{x^2+1}+1}$

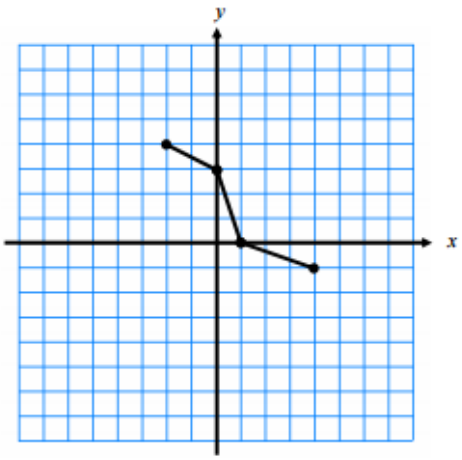
Section 1.5 Transformations

Describe the transformations that affect the function $f(x)$.

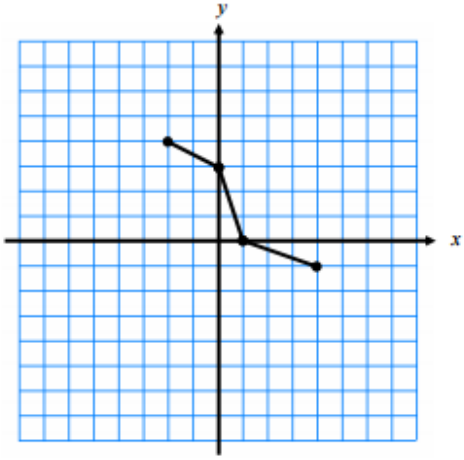
1. $y = f(x)+2$	**2.** $y = -f(x)$	**3.** $y = f(x-2)$
4. $y = f(x+3)$	**5.** $y = 5f(x)$	**6.** $y = f(-x)$

Graph the Transformations

7. 2f(x)



8. f(x-2) + 2



9. – f(x)