MATH 115 **COLLEGE ALGEBRA** **SUMMER 2018**

Guided Notes 3B Due date: 6/19/2018
Topic: Composite Functions

Answer the following questions.

1. Consider the functions $f(x) = 2x - 5$ and $g(x) = \dfrac{x-1}{x^2+3x+5}$. Evaluate the following.

   (a) $(f \circ f)(4)$

   (b) $(f \circ g)(1)$

   (c) $(g \circ f)(2)$

   (d) $(g \circ g)(0)$

2. Consider the function $f(x) = \sqrt{x^2+5}$. Find two *simple* functions g and h so that f can be viewed as $(g \circ h)$.

Guided Notes 3B Due date: 6/19/2018
Topic: Symmetry Part I

For all the graphing, use a calculator or software. Consider the function $f(x) = x^2 + 2x$.

1. Change x to $-x$ in function f and call it g: $g(x) = (-x)^2 + 2(-x)$. Compare the graphs of f and g. What do you observe?

2. Change x to $2x$ in function f and call it h: $h(x) = (2x)^2 + 2(2x)$. Compare the graphs of f and h. What do you observe?

Guided Notes 3B Due date: 6/19/2018
Topic: Symmetry Part II

For all the graphing, use a calculator or software such as *Wolfram Alpha*. Consider the function $f(x) = x^2 + 2x$.

1. Change x to $x - 4$ in function f and call it g: $g(x) = (x-4)^2 + 2(x-4)$. Compare the graphs of f and g. What do you observe?

2. Multiple the function f by 2 and call it h: $h(x) = 2(x^2 + 2x)$. Compare the graphs of f and h. What do you observe?