Algebra 2 Honors **Name**_____
Notes: 6.5 **Date**_____**Block**_____

Notation for Function Operations

Operation	Notation
Addition	
Subtraction	
Multiplication	
Division	

Example #1A Adding and Subtracting Functions
Given $f(x) = 4x^2 + 3x - 1$ and $g(x) = 6x + 2$, find each function.

$(f + g)(x)$ **$(f - g)(x)$**

Check it Out! Example #1A
Given $f(x) = 5x - 6$ and $g(x) = x^2 - 5x + 6$, find each function.

$(f + g)(x)$ **$(f - g)(x)$**

Example #2A Multiplying and Dividing Functions
Given $f(x) = 6x^2 - x - 12$ and $g(x) = 2x - 3$, find each function.

$(f\,g)(x)$ **$\left(\frac{f}{g}\right)(x)$**

Check it Out! Example #2A
Given $f(x) = x + 2$ and $g(x) = x^2 - 4$, find each function.

$(f\,g)(x)$ **$\left(\frac{g}{f}\right)(x)$**

Composition of Functions

The composition of functions *f* and *g* is notated:

The domain of $(f \circ g)(x)$ is all values of *x* in the domain of *g* such that *g*(*x*) is in the domain of *f*.

Caution

Example #3A Evaluating Composite Functions

Given $f(x) = 2^x$ and $g(x) = 7 - x$, find each value.

***f*(*g*(4))** ***g*(*f*(4))**

Check it Out! Example #3A

Given $f(x) = 2x - 3$ and $g(x) = x^2$, find each value.

***f*(*g*(3))** ***g*(*f*(3))**

Example #4A Writing Composite Functions

Given $f(x) = x^2 - 1$ and $g(x) = \frac{x}{1-x}$, write each composite function. State the domain of each.

***f*(*g*(*x*))** ***g*(*f*(*x*))**

Check it Out! Example #4A

Given $f(x) = 3x - 4$ and $g(x) = \sqrt{x} + 2$, write each composite function. State the domain of each.

***f*(*g*(*x*))** ***g*(*f*(*x*))**