**Function Notation**

Functions can be denoted as follows: f(x), g(x), h(x), etc…

Function notation states the dependent variable first followed by the independent variable/value in brackets. The purpose of function notation is to be able to briefly communicate that a function should be evaluated at a given value of the independent variable.

For example, if f(x) = 3x + 1 then f(2) means evaluate the function f(x) when x is set equal to 2.

Ie; Given f(x) = 3x+ 1, then f(2) =

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**Example 1**

Evaluate the following, given f(x) = x2 – 2x

1. f(1) b) f(-3) c) f(8)

The variable ‘x’ in f(x) can be replaced with any expression including ones that contain the variable ‘x’.

**Example 2**

Evaluate the following, given f(x) = 2x + 7

1. f(x - 3) b) f(x2 + 1)

Functions can be combined.

**Example 3**

Expand and simplify the functions h(x) and r(x), given the following definitions:

f(x) = 2x + 3

g(x) = 5x2 – 1

1. h(x) = f(x) + g(x) b) r(x) = 2f(x) - 5g(x)

Functions can be inserted into one another.

**Example 4**

Expand and simplify each function given the following definitions:

f(x) = 2x – 5

g(x) = x2 + 3

1. f(g(x)) b) g(f(x))

Note: f(g(x)) does not necessarily equal g(f(x)).

Homework: pg 22#1, 2, 3, 4a, 5ac, 7ac, 1ac, 16ab, 17