

## Math 115E Activity 5

Chapter 3 Section 1  
Introduction to function notation

Algebraic Rules		
$ax + bx = (a + b)x$	$a(bx) = abx$	$a(b + c) = ab + ac$
$b^x \cdot b^y = b^{x+y}$	$(b^x)^y = b^{xy}$	$(ab)^x = a^x b^x$
$b^{-x} = \frac{1}{b^x}$	$\frac{b^x}{b^y} = b^{x-y}$	$\left(\frac{a}{b}\right)^x = \frac{a^x}{b^x}$
$(t + 1)^2 \longrightarrow (t + 1)(t + 1) \longrightarrow t(t + 1) + 1(t + 1) \longrightarrow t^2 + t + t + 1 \longrightarrow t^2 + 2t + 1$		

### Difficulty 1:

1.  $f(x) = 2x + 1, f(2) = ?$

5.  $f(x) = 2x + 1, f(5) = ?$

2.  $f(x) = 4x - 3, f(a) = ?$

6.  $f(x) = 4x - 3, f(7) = ?$

3.  $f(x) = x + 2, f(-1) = ?$

7.  $f(x) = x + 2, f(b) = ?$

### Difficulty 2:

8.  $f(x) = 2x^2, f(2) = ?$

12.  $f(x) = 2x^2, f(5) = ?$

9.  $f(x) = -x^3 + x + 1, f(a) = ?$

13.  $f(x) = -x^3 + x + 1, f(4) = ?$

10.  $f(x) = x^2 - 4x + 2, f(0) = ?$

14.  $f(x) = x^2 - 4x + 2, f(10) = ?$

**Difficulty 3:**

15.  $f(x) = x + 1, f(a^2 + 1) = ?$

19.  $f(x) = x + 1, f(2a - 1) = ?$

16.  $f(x) = 2x, f(x - 1) = ?$

20.  $f(x) = 2x, f(x^2) = ?,$

17.  $f(x) = x^2, f(x + 1) = ?$

21.  $f(x) = x^2, f(-x + 3) = ?$

**Difficulty 4:**

23.  $f(x) = (x + 1)^2, f(x - 1) = ?$

26.  $f(x) = (x + 1)^2, f(2 + x) = ?$

24.  $f(x) = x(2x + 1)^2, f(4x) = ?$

27.  $f(x) = x(2x + 1)^2, f(0) = ?$

25.  $f(x) = (2x + 4)(x - 1), f(4) = ?$

28.  $f(x) = (2x + 4)^2, f(x + 1) = ?$