Name: KEY Date: _____

Chapter 6 Practice Test

1) Define a) variable b) constant and c) coefficient.

a) A letter or symbol used to represent an unknown or changing value

b) A term that is just a number, thus it cannot change

c) A number multiplied to a variable

2) Consider the mathematical phrase $2x^2 - 3y + 9$

a) Is it an equation or expression? expression

b) List all variables. x, y

c) List all coefficients. $2, -3$

d) List all constants 9

e) List each term separated by a comma. $2x^2, -3y, 9$

3) Evaluate for $x = 1$ and $y = -5$

a) $2x^2 + 4y - 1$

$2(-1)^2 + 4(-5) - 1$

$2(1) + 4(-5) - 1$

$2 - 20 - 1$

-19

b) $y^2 - 5x$

$(-5)^2 - 5(1)$

$25 - 5$

20

4) Simplify. a) $3m + 4 - 1m$ b) $w^2 - 5w - 3 + w^2$ c) $17 - 3n + 5r - 3 + 3n - 3r$

a) $2m + 4$ b) $2w^2 - 5w - 3$ c) $2r + 14$

5) Solve. Check (a) only. a) $y + 7 = -3$ b) $-3x = 27$ c) $\frac{-x}{3} = -39$

a) $y + 7 = -3$

$-7 \quad -7$

$y = -10$

Check:

LS	RS
$y + 7$	-3
$-10 + 7$	
-3 ✓	

b) $\frac{-3x}{-3} = \frac{27}{-3}$

$x = -9$

c) $\frac{-x(3)}{3} = -39(3)$

$\frac{-1x}{-1} = \frac{-117}{-1}$

$x = 117$

6) Solve. Check (b) only. a) $4x - 4 = -20$ b) $\frac{x}{2} + 6 = 12$ c) $-x + 8 = -3x + 4$ d) $12 - 5y + 2y = 4y$

a) $4x - 4 = -20$

$+4 \quad +4$

$\frac{4x}{4} = \frac{-16}{4}$

$x = -4$

b) $\frac{x}{2} + 6 = 12$

$-6 \quad -6$

$\frac{2x}{2} = 6(2)$

$x = 12$

Check:

LS	RS
$\frac{x}{2} + 6$	12
$\frac{12}{2} + 6$	
$6 + 6$	
12 ✓	

c) $-x + 8 = -3x + 4$

$+3x \quad +3x$

$2x + 8 = 4$

$-8 \quad -8$

$\frac{2x}{2} = \frac{-4}{2}$

$x = -2$

d) $12 - 5y + 2y = 4y$

$12 - 3y = 4y$

$+3y \quad +3y$

$\frac{12}{7} = \frac{7y}{7}$

$y = \frac{12}{7}$

7) Expand and simplify if necessary.

a) $7(3x + 2)$ b) $-(2y + x^2)$ c) $4(x + 2) + 2(x^2 - 5)$ d) $2(x^2 + 3) - (2x^2 - 2x + 1)$

a) $7(3x+2)$

$21x + 14$

b) $-(2y + x^2)$

$-2y - x^2$

c) $4(x+2) + 2(x^2 - 5)$

$4x + 8 + 2x^2 - 10$

$2x^2 + 4x - 2$

d) $2(x^2+3) - 1(2x^2 - 2x + 1)$

$2x^2 + 6 - 2x^2 + 2x - 1$

$2x + 5$

8) Solve. Do a check for (a). a) $-2(w + 2) = 6$ b) $3(x - 4) + 2(x + 2) = 3(x - 3) - 15$

a) $-2(w+2) = 6$

$-2w - 4 = 6$

$+4 \quad +4$

$\frac{-2w}{-2} = \frac{10}{-2}$

$w = -5$

Check:

LS	RS
$-2(w+2)$	6
$-2(-5+2)$	
$-2(-3)$	
6 ✓	

b) $3x - 12 + 2x + 4 = 3x - 9 - 15$

$5x - 8 = 3x - 24$

$-3x \quad -3x$

$2x - 8 = -24$

$+8 \quad +8$

$\frac{2x}{2} = \frac{-16}{2}$

$x = -8$

9) Solve. (a) $\frac{3}{-4} = \frac{x}{12}$ (b) $\frac{(x-3)}{-2} = \frac{(x+2)}{-4}$ (c) $\frac{12x}{3} - \frac{12(x+11)}{4} = x(12)$

$-4x = 36$

$\frac{-4x}{-4} = \frac{36}{-4}$

$x = -9$

$-4(x-3) = -2(x+2)$

$-4x + 12 = -2x - 4$

$+2x \quad +2x$

$-2x + 12 = -4$

$-12 \quad -12$

$\frac{-2x}{-2} = \frac{-16}{-2}$

$x = 8$

$4x - 3(x+11) = 12x$

$4x - 3x - 33 = 12x$

$x - 33 = 12x + 33$

$+33 \quad +33$

$1x = 12x + 33$

$-12x \quad -12x$

$\frac{-11x}{-11} = \frac{33}{-11}$

$x = -3$