

Name: Key

Solving Equations – Worksheet #3

1. Solve the following equations. Show all of your work.

a) $118 = 2(8x + 3)$

$$118 = 16x + 6$$

$$112 = 16x$$

$$x = 7$$

b) $-8(-5n - 3) = -256$

$$40n + 24 = -256$$

$$40n = -280$$

$$n = -7$$

c) $-7x - 8(1 + x) = 8x + 15$

$$-7x - 8 - 8x = 8x + 15$$

$$-7x - 8x - 8x = 15 + 8$$

$$-23x = 23$$

$$x = -1$$

d) $88 = 4x - 6(2x - 4)$

$$88 = 4x - 12x + 24$$

$$88 - 24 = 4x - 12x$$

$$64 = -8x$$

$$x = -8$$

e) $6x - 33 = 3 - 6(1 - 2x)$

$$6x - 33 = 3 - 6 + 12x$$

$$6x - 12x = 3 - 6 + 33$$

$$-6x = 30$$

$$x = -5$$

f) $2(1 + 4k) - 3k = 3(k + 8)$

$$2 + 8k - 3k = 3k + 24$$

$$8k - 3k - 3k = 24 - 2$$

$$2k = 22$$

$$k = 11$$

2. Solve the following equations. Verify each solution. Show all of your work.

$$a) 3(3r+8) = 3(7+4r)$$

$$9r + 24 = 21 + 12r$$

$$9r - 12r = 21 - 24$$

$$-3r = -3$$

$$r = 1$$

Check

$$3(3(1) + 8) = 3(7 + 4(1))$$

$$3(11) = 3(11)$$

$$33 = 33 \checkmark$$

$$c) -18 + 7x = -5x + 5(7x + 1)$$

$$-18 + 7x = -5x + 35x + 5$$

$$7x + 5x - 35x = 5 + 18$$

$$-23x = 23$$

$$x = -1$$

Check

$$-18 + 7(-1) = -5(-1) + 5(7(-1) + 1)$$

$$-18 - 7 = 5 + 5(-7 + 1)$$

$$-25 = 5 - 30$$

$$-25 = -25 \checkmark$$

$$b) 5(1+2x) = 6x - 15$$

$$5 + 10x = 6x - 15$$

$$10x - 6x = -15 - 5$$

$$4x = -20$$

$$x = -5$$

Check

$$5(1 + 2(-5)) = 6(-5) - 15$$

$$5(1 - 10) = -30 - 15$$

$$5(-9) = -45$$

$$-45 = -45 \checkmark$$

$$d) 6(8m - 1) = 2 + 7(7m - 3)$$

$$48m - 6 = 2 + 49m - 21$$

$$48m - 49m = 2 - 21 + 6$$

$$-1m = -13$$

$$m = 13$$

Check

$$6(8(13) - 1) = 2 + 7(7(13) - 3)$$

$$6(104 - 1) = 2 + 7(91 - 3)$$

$$6(103) = 2 + 7(88)$$

$$618 = 2 + 616$$

$$618 = 618 \checkmark$$