MATH 260 – QUIZ #1

Name: ___KEY___

Directions: Please show all work for maximum credit. This quiz is worth 10 points. Good luck!

1. Solve the following system of equations using any method. State if the system is consistent or inconsistent. If the system has an infinite number of solutions, give a parametric representation of the solution set.

(3 points) a.
$$3x + 2y = 2$$
$$6x + 4y = 14$$

$$-2(3x+2y=2)$$
$$6x+4y=14$$

$$-6x-4y=-4$$
$$6x+4y=14$$
$$\overline{\qquad\qquad}$$
$$0 = 10$$

Inconsistent

No solution

(3 points) b.
$$-x + 3y = 17$$
$$4x + 3y = 7$$

$$x - 3y = -17$$
$$4x + 3y = 7$$
$$\overline{\qquad\qquad}$$
$$5x = -10$$
$$x = -2$$

$$-(-2) + 3y = 17$$
$$2 + 3y = 17$$
$$3y = 15$$
$$y = 5$$

$$(-2, 5)$$

Consistent

(3 points) c.
$$3x + 6y = 9$$
$$4x + 8y = 12$$

$$4(3x+6y=9)$$
$$-3(4x+8y=12)$$

$$12x + 24y = 36$$
$$-12x - 24y = -36$$
$$\overline{\qquad\qquad}$$
$$0 = 0$$

Infinite # of solutions

Consistent

$$\text{Let } y = t \qquad 3x + 6t = 9$$
$$3x = 9 - 6t$$
$$x = 3 - 2t$$

$$\{(3 - 2t, t) \mid t \in \mathbb{R}\}$$

(1 point) 2. Find a parametric representation of the solution set of the linear equation:
$$x + 2y - 4z = 3$$

Let $z = t$ and $y = s$. So $x = 3 - 2s + 4t$

$$\{(3 - 2s + 4t, s, t) \mid s, t \in \mathbb{R}\}$$