Quiz 1b

Please show all your work and circle your answer! You have 15 minutes for this quiz.

Name:__

Determine whether each of the following systems of linear equations has a solution, if there is a solution, find it.

1. (5pts)

$$21x - 6y = 4$$
$$-14x + 4y = 1$$

Solution: Multiply the first equation by $\frac{2}{3}$ to get:

$$14x - 4y = \frac{8}{3} \tag{1}$$

Add this equation to the second equation to get:

$$0 = \frac{11}{3} \tag{2}$$

This means that there is no x and y that solves this system of equations, therefore there is no solution and this is an inconsistent system of equations.

2. (5 pts)

$$x + y + z = 0$$
$$x + y = 0$$
$$x = -1$$

Solution: x = -1, substitute this into the second equation to get -1 + y = 0 so y = 1, substitute this into the first equation to get -1 + 1 + z = 0 therefore z = 0