Math 33A – Week 1

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Name: _____

1. Consider the system

$$\begin{aligned} 2x - y &= 7 \\ -x + \frac{1}{2}y &= 10 \end{aligned}$$

   (a) Solve the system using elimination or substitution.

   (b) How many solutions does this system have?

   (c) Solve using Gaussian or Gauss-Jordan elimination and show you have the same result as part (a).

2. Consider the system

$$\begin{aligned} x + 2y &= 13 \\ 4x + 8y &= 52 \end{aligned}$$

   (a) Solve the system using elimination or substitution.

   (b) How many solutions does this system have?

   (c) Solve using Gaussian or Gauss-Jordan elimination and show you have the same result as part (a).

3. Consider the system

$$x + 3y = 21$$
$$5x - y = -7$$

(a) Solve the system using elimination or substitution.

(b) How many solutions does this system have?

(c) Solve using Gaussian or Gauss-Jordan elimination and show you have the same result as part (a).

4. (a) Is it possible for a system of equations to have exactly two solutions?

(b) How many solutions can a linear system have? (*Hint*: Three possibilities)

(c) Using Gaussian or Gauss-Jordan elimination, how do you know when you have no solution?

(d) Using Gaussian or Gauss-Jordan elimination, how do you know when you have infinitely many solutions?