MATH 117: HW # 6

Instructor: Joseph McGuire

Due: 10/30/2020 11:59pm

Please show your work for the following problems. These problems have solutions that are easily found online, so most of your grade will be based on explaining how we get the solution that we get. You can use a calculator as long as you show the setup of the equation.

1

If a unique solution exists, find the point (x, y) in terms of a and b that is the solution:

$$\begin{cases} x + y = 0 \\ x + ay = 1 \end{cases} \quad (a \neq 1)$$

2

Solve the system, or show that it has no solution. If the system has infinitely many solutions, express them in the ordered-pair form given in Example 6.

$$\begin{cases} 3x + 2y = 0 \\ -x - 2y = 8 \end{cases}$$

3

Find two numbers whose sum is 34 and whose difference is 10. (Hint: Set up a system of equations and solve for your unknowns)

4

Find the complete solution of the linear system, or show that it's inconsistent.

$$\begin{cases} x - y - z & = 4 \\ 2y + z & = -1 \\ -x + y - 2z & = 5 \end{cases}$$

5

Find the complete solution of the linear system, or show that it's inconsistent.

$$\begin{cases} x + y + z & = 4 \\ x + 3y + 3z & = 10 \\ 2x + y - z & = 3 \end{cases}$$