Precalculus Quiz Review#1: Spring 2022

Name:

February 28, 2022

1. An **consistent system** is one which...

   A. has exactly one solution.
   B. has more than one solutions.
   C. has no solutions
   D. has at least one solution.

2. A **augmented matrix** will always contain...

   A. one more row than equations in a linear system.
   B. exactly the same number of columns as variables in a linear system.
   C. one more column than variables in a linear system
   D. exactly three rows.

3. Use the substitution method to solve the nonsquare system below:

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

4. Which of the following represents the solution set for the nonsquare system below, where a is any real number?

$$\begin{cases} 2x - 3y + z = -2 \\ -4x + 9y + z = 7 \end{cases}$$

   A. $x = -\frac{5}{6}a - \frac{1}{6}, y = \frac{7-a}{9}, z = a$
   B. $x = \frac{1}{2} - 2a, y = 1 - a, z = a$
   C. $x = \frac{1}{2} + 2a, y = 1 + a, z = a$
   D. This is an inconsistent system.

5. Use **Gaussian elimination** to solve this system of equations. You can convert to augmented matrix form if you want to. Show all work.

$$\begin{cases} x + 2y + z = 8 \\ 2x + y + 2z = 10 \\ 3x + y - z = 2 \end{cases}$$

Extra credit: Use Gauss-Jordan elimination to find the solution set for this system.

Answer here (if you need more space, feel free to ask for scrap paper):