Precalculus Quiz#1: Spring 2022

Name:

February 17, 2022

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

   A. has an infinite number of solutions.

   B. has more variables than equations

   C. has no solutions

   D. contains at least one polynomial term.

2. Which of the following does **not** represent a solution to the system below
$$\begin{cases} x^2 - 2x + y = 8 \\ x - y = -2 \end{cases}$$

   A. $x = -2, y = 0$

   B. $x = 3, y = 5$

   C. $x = 3, y = 2$

3. Explain how you could use **substitution** to find the solution set for the system in question (2):

4. A **coefficient matrix** will always contain...

   A. one more row than equations in a linear system.

   B. the same number of rows as equations in a linear system.

   C. one fewer column than variables in a linear system

   D. exactly three columns.

5. 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.

6. 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):