

## Precalculus Quiz #1 (Retake): Spring 2022

Name:

March 2, 2022

1. A system of equations with an infinite number of solutions is...
  - A. inconsistent.
  - B. consistent.
  - C. asymmetric.
  - D. impossible.
  
2. A **coefficient matrix** will always contain...
  - A. exactly three columns.
  - B. more columns than variables.
  - C. one row for every equation.
  - D. one column for every equation.
  
3. The system of equations below has an infinite number of solutions:
$$\begin{cases} 3x + 2y + z = 8 \\ -6x \quad \quad + 2z = 4 \end{cases}$$
Which of the following is **not** a possible solution?
  - A.  $x = 1, y = 0, z = 5$
  - B.  $x = 0, y = 3, z = 2$
  - C.  $x = 1, y = 1, z = 4$
  - D.  $x = -1, y = 6, z = -1$

4.

$$\begin{bmatrix} 1 & -3 \\ 0 & 0 \\ 5 & -3 \end{bmatrix} + \begin{bmatrix} 2 & 3 & 14 \\ 0 & 0 & 0 \end{bmatrix} =$$

- A.  $\begin{bmatrix} -1 & 3 & 11 \\ 1 & 0 & 5 \end{bmatrix}$
- B.  $\begin{bmatrix} 3 & 3 & 19 \\ -3 & 0 & -3 \end{bmatrix}$
- C.  $\begin{bmatrix} 7 & 3 & 15 \\ -3 & 0 & -3 \end{bmatrix}$
- D. Matrix addition is undefined here.

Show your work or explain your answer here:

5. For the system of equations to the right,
- $$\begin{cases} x + 3y + 2z = 2 \\ 2x + 7y + 7z = -1 \\ 2x + 5y + 2z = 7 \end{cases}$$
- Convert to **augmented matrix** form
  - Use **Gaussian Elimination** to transform to row-echelon form
  - Solve for  $x, y$  and  $z$ . For full credit use **Gauss-Jordan elimination**. For partial credit use back-substitution.

Use this space to continue work on (5).