Math 2418 Linear Algebra Quiz #3

1.) Determine if the system of equations corresponding to the augmented matrices below has no solution, exactly one solution, or an infinite number of solutions. If it has an infinite number of solutions, state the number of free variables.

1a.) $\begin{bmatrix} 0 & 6 & 3 & 7 & 2 \\ 0 & 0 & 5 & 2 & 8 \\ 0 & 0 & 0 & 0 & 4 \end{bmatrix}$ Answer 1a:_____

1b.) $\begin{bmatrix} 0 & 6 & 3 & 7 & 2 \\ 0 & 0 & 5 & 2 & 8 \\ 0 & 0 & 0 & 1 & 4 \end{bmatrix}$ Answer 1b:_____

1c.) $\begin{bmatrix} 0 & 6 & 3 & 7 & 2 \\ 0 & 0 & 5 & 2 & 8 \\ 0 & 0 & 0 & 1 & 4 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$ Answer 1c:_____

1d.) $\begin{bmatrix} 3 & 6 & 3 & 7 & 2 \\ 0 & 9 & 5 & 2 & 8 \\ 0 & 0 & 7 & 1 & 4 \\ 0 & 0 & 0 & 5 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$ Answer 1d:_____

2.) Circle the most correct answer.

2a.) A system of linear equations with more variables than equations can have

i.) no solution ii.) exactly one solution iii.) infinite number of solutions

iv.) at most one solution v.) at least one solution

vi.) no solution or an infinite number of solutions.

2b.) A homogeneous system of linear equations with more variables than equations can have

i.) no solution ii.) exactly one solution iii.) infinite number of solutions

iv.) at most one solution v.) at least one solution

vi.) no solution or an infinite number of solutions.

3.) Circle T for True or F for False.

3a.) A system of linear equations can have exactly 3 solutions T F

3b.) If $AB = AC$, then $B = C$ T F

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