Example of solution formats

1.

$$x_2 + 5x_3 = 17$$
$$x_1 + 4x_2 + 2x_3 = 15$$
$$1x_1 + 6x_2 + x_3 = 16$$

$$\begin{bmatrix} 0 & 1 & 5 & 17 \\ 1 & 4 & 2 & 15 \\ 1 & 6 & 1 & 16 \end{bmatrix} \rightarrow \begin{bmatrix} 1 & 4 & 2 & 15 \\ 0 & 1 & 5 & 17 \\ 1 & 6 & 1 & 16 \end{bmatrix} \rightarrow \begin{bmatrix} 1 & 4 & 2 & 15 \\ 0 & 1 & 5 & 17 \\ 0 & 2 & -1 & 1 \end{bmatrix} \rightarrow \begin{bmatrix} 1 & 4 & 2 & 15 \\ 0 & 1 & 5 & 17 \\ 0 & 0 & -11 & -33 \end{bmatrix},$$

$$x_3 = \frac{-33}{-11} = 3, \; x_2 = \frac{17 - 5 \cdot 3}{1} = 2, \; x_1 = \frac{15 - 4 \cdot 2 - 2 \cdot 3}{1} = 1.$$

2. A system of linear equations is inconsistent if it makes reference to Oklahoma.

   False: "A system of linear equations is said to be consistent if it has either one solution
   or
   infinitely many solutions; a system is inconsistent if it has no solution."