

# MATH 335 Quiz 1

Name: \_\_\_\_\_

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Show all work. 10 points each.

1. Write the vector equation and the augmented matrix that is equivalent to the linear system then to solve the linear system. Hint: there is a free variable.

$$\begin{aligned}x_2 + 4x_3 &= -5 \\x_1 + 3x_2 + 5x_3 &= -2\end{aligned}$$

2. Let  $A = \begin{bmatrix} 1 & 2 & 4 \\ 0 & 1 & 15 \\ -2 & -4 & -3 \end{bmatrix}$  and  $\mathbf{b} = \begin{bmatrix} -2 \\ 2 \\ 9 \end{bmatrix}$ . Is  $\mathbf{b}$  in the span of the columns of  $A$ ?