Quiz 1

Name:

Score:

- 1. Find the general solution to the system of linear equations or write that there is no solution if the system is inconsistent:
 - $5x_1 + 2x_2 = 1$ $x_1 + x_2 = 1$ $3x_1 + 2x_2 = 3$

Solutions:

2. Multiply the matrices A and B to find AB or write that it is impossible to multiply them.

$$A = \begin{bmatrix} -2 & -1 \\ 2 & -2 \\ 3 & 5 \end{bmatrix} \qquad B = \begin{bmatrix} -4 & 3 \\ 2 & -2 \end{bmatrix}$$

$$AB = \begin{bmatrix} & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & &$$

3. Is the vector

$$\vec{b} = \begin{bmatrix} 12\\ -8\\ -15 \end{bmatrix}$$

in the span of the vectors

$$\begin{bmatrix} 1\\0\\1 \end{bmatrix}, \begin{bmatrix} 3\\0\\3 \end{bmatrix}, \begin{bmatrix} -1\\1\\3 \end{bmatrix}, \begin{bmatrix} 3\\-2\\-4 \end{bmatrix}?$$

If so, find *one* linear combination of these vectors that gives \vec{b} . (Hint: Put the augmented matrix given by the vectors and \vec{b} in RREF.)

Linear Combination:

Answer: