## Quiz 1

Name: $\qquad$ Score: $\qquad$

1. Find the general solution to the system of linear equations or write that there is no solution if the system is inconsistent:

$$
\begin{array}{r}
5 x_{1}+2 x_{2}=1 \\
x_{1}+x_{2}=1 \\
3 x_{1}+2 x_{2}=3
\end{array}
$$

Solutions: $\qquad$
2. Multiply the matrices $A$ and $B$ to find $A B$ or write that it is impossible to multiply them.

$$
A=\left[\begin{array}{cc}
-2 & -1 \\
2 & -2 \\
3 & 5
\end{array}\right] \quad B=\left[\begin{array}{cc}
-4 & 3 \\
2 & -2
\end{array}\right]
$$

$$
A B=\left[\begin{array}{ll}
\square & \square
\end{array}\right]
$$

3. Is the vector

$$
\vec{b}=\left[\begin{array}{c}
12 \\
-8 \\
-15
\end{array}\right]
$$

in the span of the vectors

$$
\left[\begin{array}{l}
1 \\
0 \\
1
\end{array}\right],\left[\begin{array}{l}
3 \\
0 \\
3
\end{array}\right],\left[\begin{array}{c}
-1 \\
1 \\
3
\end{array}\right],\left[\begin{array}{c}
3 \\
-2 \\
-4
\end{array}\right] ?
$$

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.)

Answer: $\qquad$

Linear Combination:

