

Math 3160 - Quiz 1

Name: _____

1. Solve the following systems of linear equations. Write as augmented matrix and reduce to RREF.

$$\begin{array}{rrcr} 2x_1 & -x_2 & +4x_3 & = 2 \\ & & x_3 & = 0 \\ x_1 & -x_2 & +2x_3 & = 6 \end{array}$$

$$\begin{array}{rrcr} x_1 & +4x_2 & +7x_3 & = 2 \\ 2x_1 & +5x_2 & +8x_3 & = 0 \\ 3x_1 & +6x_2 & +9x_3 & = 0 \end{array}$$

$$\begin{array}{rrrrcr} 2x_1 & -2x_2 & +4x_3 & & -6x_5 & = 2 \\ & & x_3 & +6x_4 & & = 0 \\ x_1 & -x_2 & +2x_3 & +x_4 & +x_5 & = 0 \end{array}$$

2. Solve the following system of linear equations for the functions $\sin(x)$, $\sin(2x)$ and $\sin(3x)$.

$$\begin{array}{rrcr} 2\sin(x) & -2\sin(2x) & +4\sin(3x) & = 2 \\ & 4\sin(2x) & +\sin(3x) & = 2 \end{array}$$