1. Suppose $A = \begin{bmatrix} 1 & a \\ -9 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 \\ 2 & 3 \end{bmatrix}$, where $a$ is a real number. Compute $AB$.

**Answer:** This question is similar to problem 27 in Section 2.1

$$AB = \begin{bmatrix} 2a & 1+3a \\ 6 & 0 \end{bmatrix}$$

2. Use Gaussian elimination to find the inverse of $A = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 1 \\ 1 & 1 & 2 \end{bmatrix}$.

**Answer:** This question is similar to problem 29 or 33 in Section 2.2

$$A^{-1} = \begin{bmatrix} 1 & -1 & 0 \\ 1 & 1 & -1 \\ -1 & 0 & 1 \end{bmatrix}$$
Linear Algebra MATH 2076 Quiz-4a Answer: Key

Be sure to show your work. **No credit for inspired answers!**

1. Suppose \( A = \begin{bmatrix} 0 & 2 \\ 1 & 3 \end{bmatrix}, \ B = \begin{bmatrix} 1 & -9 \\ b & 3 \end{bmatrix} \), where \( b \) is a real number. Compute \( AB \).

   **Answer:** This question is similar to problem 27 in Section 2.1

   \[
   AB = \begin{bmatrix} 2b & 6 \\ 1 + 3b & 0 \end{bmatrix}
   \]

2. Use Gaussian elimination to find the inverse of \( A = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 1 & 1 \\ 1 & 2 & 1 \end{bmatrix} \).

   **Answer:** This question is similar to problem 29 or 33 in Section 2.2

   \[
   A^{-1} = \begin{bmatrix} 1 & -1 & 0 \\ -1 & 0 & 1 \\ 1 & 1 & -1 \end{bmatrix}
   \]