Unit 14.2 Matrices

1. Add or subtract the following matrices

   a. $\begin{bmatrix} 3 & -6 & 2 \\ 7 & 7 & 6 \end{bmatrix} - \begin{bmatrix} 2 & 1 & -3 \\ 4 & 5 & 5 \end{bmatrix}$

   b. $\begin{bmatrix} -2 & 0 \\ 5 & 7 \\ 5 & 4 \end{bmatrix} + \begin{bmatrix} -2 & 3 \\ 7 & 7 \\ -7 & 6 \end{bmatrix}$

2. If $A = \begin{bmatrix} -5 & 5 & -4 \\ -2 & 2 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} -3 & -6 \\ 2 & 3 \\ 6 & 1 \end{bmatrix}$ find AB

3. If $A = [4x \quad xy]$ and $B = \begin{bmatrix} x^2 & 0 & 6xy \\ -6x & 0 & -3 \end{bmatrix}$ find AB

4. If $A = \begin{bmatrix} 3 & 1 & 6x \\ -4y & 0 & -1 \end{bmatrix}$ find $(3 \cdot A)$

5. Put the following systems of equations into matrices but do not solve

   a. $5x + 2y - 2z = -1$
      $2x - z = 7$
      $-4x + y = -21$

   b. $10m - 4u + 8w = -2$
      $6m = 5u - 4w + 6$
      $17u - 4 = w$

6. Solve the systems of equations using the Matrix Method

   a. $x + 2y = 3$
      $2x - y = -4$

b. $7x + 2y = 24$
$8x + 2y = 30$

c. $-2x + 4y + z = -3$
$x - 3y + 2z = 11$
$x - 2y + 3z = 12$

d. $x - y + 5z = -6$
$x + 2z = 0$
$6x + y + 3z = 0$

e. $3x + 4y = 11$
$x + y = -2$
$2y + z = -4$