## Addition, Subtraction, Scalar Multiplication of Matrices

God loves the sinner but not the sin.

"...but God shows his love for us in that while we were still sinners, Christ died for us." - Romans 5:8

Add the following matrices.

1. 
$$\begin{bmatrix} 4 & 9 & -1 \\ 0 & 3 & 2 \\ -3 & 1 & 5 \end{bmatrix} + \begin{bmatrix} 6 & -2 & 1 \\ -1 & -2 & 4 \\ 5 & -8 & 6 \end{bmatrix}$$
 2. 
$$\begin{bmatrix} -4 & 7 \\ 8 & 5 \end{bmatrix} + \begin{bmatrix} 5 & -2 \\ -1 & 1 \end{bmatrix}$$

$$\begin{bmatrix}
-4 & 7 \\
8 & 5
\end{bmatrix} + \begin{bmatrix}
5 & -2 \\
-1 & 1
\end{bmatrix}$$

Subtract the following matrices.

3. 
$$\begin{bmatrix} 3 & 6 & -1 \\ -2 & 5 & -4 \end{bmatrix} - \begin{bmatrix} 8 & 9 & 4 \\ -2 & 7 & 3 \end{bmatrix}$$

3. 
$$\begin{bmatrix} 3 & 6 & -1 \\ -2 & 5 & -4 \end{bmatrix}$$
 -  $\begin{bmatrix} 8 & 9 & 4 \\ -2 & 7 & 3 \end{bmatrix}$  4.  $\begin{bmatrix} 6 & 8 \\ -7 & 4 \\ 5 & -2 \end{bmatrix}$  -  $\begin{bmatrix} -1 & 0 \\ -2 & -8 \\ -3 & 6 \end{bmatrix}$ 

Multiply the following matrices.

$$\begin{array}{ccccc}
6. & & & & \\
\frac{1}{2} & & 9 & 6 \\
8 & -5
\end{array}$$

Simplify the following expression.

7. 
$$2\begin{bmatrix} 3 & 5 & 6 \\ 1 & -1 & -2 \\ -2 & 4 & 4 \end{bmatrix} + 5\begin{bmatrix} 0 & 4 & 1 \\ -2 & 3 & -2 \\ 3 & -2 & 6 \end{bmatrix}$$
 8.  $3\begin{bmatrix} -4 & 2 \\ 5 & 0 \\ 1 & -1 \end{bmatrix} - 2\begin{bmatrix} 3 & 0 \\ 4 & -1 \\ -2 & 5 \end{bmatrix}$ 

8. 
$$\begin{bmatrix} -4 & 2 \\ 5 & 0 \\ 1 & -1 \end{bmatrix} - 2 \begin{bmatrix} 3 & 0 \\ 4 & -1 \\ -2 & 5 \end{bmatrix}$$