

1) Given matrices

$$\mathbf{A} = \begin{pmatrix} 0 & 8 & 6 \\ 7 & 5 & 3 \\ 0 & 9 & 0 \end{pmatrix}$$

$$\mathbf{B} = \begin{pmatrix} 3 & 1 & 4 \\ 1 & 5 & 9 \\ 2 & 6 & 5 \end{pmatrix}$$

compute $\mathbf{A} \cdot \mathbf{B}$, and compute $cA + dB$ for $c = 2$. and $d = -1$.

2) Solve the following system of equations:

$$x + y + 6z = 0$$

$$-2x + 3y + z = -3$$

$$3x - 4y + 2z = 2$$