

Scalar Multiplication with Addition and Subtraction

1) If $P = \begin{pmatrix} 4 & 2 \\ 6 & 5 \\ -3 & 4 \end{pmatrix}$ and $Q = \begin{pmatrix} 2 & 1 \\ 2 & 0 \\ 1 & 8 \end{pmatrix}$, calculate $-3P + 2Q$

$$-3P = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix}$$

$$2Q = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix}$$

$$-3P + 2Q = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix} = \begin{bmatrix} \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \\ \boxed{} & \boxed{} \end{bmatrix}$$

Final Answer

2) Given $X = \begin{pmatrix} -4 & 6 & 8 \\ 8 & -10 & 2 \end{pmatrix}$ and $Y = \begin{pmatrix} 5 & -2 & 6 \\ -1 & 0 & -4 \end{pmatrix}$, evaluate: $\frac{1}{2}X - 3Y$

$$\frac{1}{2}X = \begin{bmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{bmatrix}$$

$$3Y = \begin{bmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{bmatrix}$$

$$\frac{1}{2}X - 3Y = \begin{bmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{bmatrix} = \begin{bmatrix} \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{bmatrix}$$

Final Answer

