

ENTER THE MATRIX

Let \mathbf{A} be the following 3×3 matrix:

$$\begin{bmatrix} 264 & 264 & 264 \\ 0 & 280 & 0 \\ 0 & 280 & 0 \end{bmatrix}$$

We define the function M such that

$$M(\mathbf{A}) = 278$$

Similarly, if $\mathbf{B} = \begin{bmatrix} 264 & 264 & 264 \\ 264 & 264 & 264 \\ 264 & 264 & 264 \end{bmatrix}$ and $\mathbf{C} = \begin{bmatrix} 5 & 0 & 0 \\ 5 & 5 & 0 \\ 5 & 5 & 5 \end{bmatrix}$, then

$$M(\mathbf{B}) = 57$$

$$M(\mathbf{C}) = 53$$

We define the following matrices:

$$\mathbf{D} = \begin{bmatrix} 5 & 0 & 0 \\ 5 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}, \mathbf{E} = \begin{bmatrix} 0 & 0 & M(\mathbf{D}) \\ 0 & M(\mathbf{D}) & 287 \\ M(\mathbf{D}) & 0 & 287 \end{bmatrix}, \mathbf{F} = \begin{bmatrix} 4 & 4 & 4 \\ 4 & 261 & 4 \\ 4 & 331 & 4 \end{bmatrix},$$

$$\mathbf{G} = \begin{bmatrix} 5 & 4 & 4 \\ 5 & 265 & 331 \\ 5 & 4 & 4 \end{bmatrix}, \mathbf{H} = \begin{bmatrix} 0 & 0 & 0 \\ 35 & 35 & 35 \\ 5 & 5 & 5 \end{bmatrix}, \mathbf{I} = \begin{bmatrix} tr(\mathbf{H}) & det(\mathbf{H}) & 0 \\ 375 & 353 & 0 \\ 0 & 0 & 0 \end{bmatrix}.$$

Compute:

$$M(\mathbf{D}) + M(\mathbf{E}) + M(\mathbf{F}) + M(\mathbf{G}^T) + M(\mathbf{H}) + M(\mathbf{I})$$