

Name: ANSWER KEY

Score: \_\_\_\_\_

Find the inverse:

$$\begin{pmatrix} -2 & 2 & 3 \\ 1 & -1 & 0 \\ 0 & 1 & 4 \end{pmatrix}^{-1} = \frac{1}{3} \begin{pmatrix} -4 & -5 & 3 \\ -4 & -8 & 3 \\ 1 & 2 & 0 \end{pmatrix}$$

$$\left( \begin{array}{ccc|ccc} -2 & 2 & 3 & 1 & 0 & 0 \\ 1 & -1 & 0 & 0 & 1 & 0 \\ 0 & 1 & 4 & 0 & 0 & 1 \end{array} \right) \rightarrow \left( \begin{array}{ccc|ccc} \textcircled{1} & -1 & 0 & 0 & 1 & 0 \\ 0 & 1 & 4 & 0 & 0 & 1 \\ -2 & 2 & 3 & 1 & 0 & 0 \end{array} \right) \rightarrow \left( \begin{array}{ccc|ccc} 1 & -1 & 0 & 0 & 1 & 0 \\ 0 & \textcircled{1} & 4 & 0 & 0 & 1 \\ 0 & 0 & 3 & 1 & 2 & 0 \end{array} \right)$$

$$\rightarrow \left( \begin{array}{ccc|ccc} 1 & 0 & 4 & 0 & 1 & 1 \\ 0 & 1 & 4 & 0 & 0 & 1 \\ 0 & 0 & 3 & 1 & 2 & 0 \end{array} \right) \rightarrow \left( \begin{array}{ccc|ccc} 1 & 0 & 4 & 0 & 1 & 1 \\ 0 & 1 & 4 & 0 & 0 & 1 \\ 0 & 0 & \textcircled{1} & 1/3 & 2/3 & 0 \end{array} \right) \rightarrow \left( \begin{array}{ccc|ccc} 1 & 0 & 0 & -4/3 & -5/3 & 1 \\ 0 & 1 & 0 & 4/3 & -8/3 & 1 \\ 0 & 0 & 1 & 1/3 & 2/3 & 0 \end{array} \right)$$