

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 1) Let $\mathbf{A} = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$; find \mathbf{A}^{-1} . 1) _____

- 2) (a) If \mathbf{A} is the coefficient matrix of the system $\begin{cases} x + 3y = 2 \\ x + 2y = 5 \end{cases}$, determine \mathbf{A}^{-1} . 2) _____
 (b) Use \mathbf{A}^{-1} to solve the system.

- 3) Look at the equations $\begin{cases} 2x + y = 5 \\ 7x + 4y = 7 \end{cases}$ 3) _____
 (a) Set up these equations in the matrix form $\mathbf{Ax} = \mathbf{b}$
 (b) Find \mathbf{A}^{-1}
 (c) Using \mathbf{A}^{-1} , solve the equations.

- 4) 4) _____
 Let $\mathbf{A} = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 5 & 7 \\ -3 & -6 & -10 \end{bmatrix}$. Find \mathbf{A}^{-1} .

- 5) A group of investors has \$500,000 to invest in the stocks of three companies. Company A sells for \$50 a share and has an expected growth of 13% per year. Company B sells for \$20 per share and has an expected growth of 15% per year. Company C sells for \$80 a share and has an expected growth of 10% per year. 5) _____
 The group decides to try a new investment strategy which entails buying equal amounts of shares in Company B and Company C, and having a goal of 11.4% growth per year. How many shares of each stock should they buy?