

Name: \_\_\_\_\_

Date: \_\_\_\_\_

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## MA 162

Week 8 Recitation Worksheet (Thursday)

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**You must show all work to receive full credit.**

1. Use the Gauss-Jordan method to determine the inverse of the matrix

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 4 & 0 \\ -5 & -6 & -7 \end{bmatrix}.$$

2. Use  $A^{-1}$  from #1 to solve the following system of equations.

$$\begin{cases} x + 2y + 3z = 8 \\ \phantom{x} + 4y = -16 \\ -5x - 6y - 7z = 32 \end{cases}$$

3. An economy has three industries: farming (F), building (B) and clothing (C). The amount consumed by each sector is given by the following table.

	F produces	B produces	C produces
F consumes	.3	.2	.3
B consumes	.4	.4	.2
C consumes	.3	.4	.5

(a) Write down the internal consumption matrix  $A$ .

(b) Write down the associated augmented matrix that will be used to solve the closed model.

- (c) Use the Gauss-Jordan method on the augmented matrix from part (b) to determine how much the farmers and builders produce for every \$17 worth of clothing that is produced.