

Name _____

Per/Sec. _____

Always show work. For calculator questions, show the matrices used.

Graphing calculator not allowed

1. $\begin{vmatrix} 4 & 1 \\ 3 & 2 \end{vmatrix}$

2. $\begin{vmatrix} -2 & 2 & 3 \\ 5 & 0 & 1 \\ 6 & -4 & -4 \end{vmatrix}$

3. Solve using Cramer's Method. $x + 6y = -9$
 $x - 3y = 6$

4. Solve using the inverse matrix. $-3a + b = -3$
 $5a - 2b = 10$

Graphing calculator allowed

5. $4x + y = -7$
 $x - 2z = 4$
 $3y + 2z = -3$

6. A local theater charges for \$2.25 for general admission and \$3.50 for box office seats. For a certain performance, 165 tickets were sold, which brought in a total of \$482.50. Find out how many of each type of ticket were sold.

7. From two kinds of corn meal, one costing \$0.65/kg and the other \$0.85/kg, a cattle farmer wishes to make a 100 kilogram mixture costing \$0.76/kg. How many kilograms of each kind should be used?

8. An airline maintains three different classes of service in a Boeing 747: first, business, and economy. The configuration of the plane (number of seats in each class) is based on demand. There are 42 seats available for either first or business class, and 570 seats for either business or economy class. If, on a certain flight, there are 34 times as many economy as first class seats, what is the configuration of the plane?

Answer

76 general, 89 box
55 kg at \$0.85, 45 kg at \$0.65
16 first class, 26 business, 544 economy

- 5. $(-2, 1, -3)$
- 4. $(-4, -15)$
- 3. $(1, -\frac{3}{5})$
- 2. -16
- 1. 5