Pre-Calculus Name _____
Unit E REVIEW: Chapter 6 Matrices

1. The table shows several boxes of assorted candy available at a candy shop. What is the price per pound for each candy?

Box	Chocolate	Taffy	Nougat	Price ($)
Grand Edition	10	5	0	12.25
Special Edition	10	5	5	16.25
Deluxe Edition	15	10	5	24.25

A) ($0.85, $0.75, $0.80)

B) ($0.75, $0.80, $0.85)

C) ($0.80, $0.75, $0.85)

D) ($0.75, $0.85, $0.80)

2. What is the determinant of $\begin{bmatrix} 3 & -2 \\ 4 & 0 \end{bmatrix}$?

A) –8 B) 8 C) 12 D) 20

3. What is the determinant of $\begin{bmatrix} 4 & 3 & 5 \\ 6 & 2 & 7 \\ 1 & 8 & 7 \end{bmatrix}$

A) 13 B) -43 C) 677 D) 9

4. Find *DE* if $D = \begin{bmatrix} -2 & 4 & 6 \\ 5 & -7 & -1 \end{bmatrix}$ and $E = \begin{bmatrix} 1 & -2 \\ 0 & 4 \\ -3 & 4 \end{bmatrix}$.

A) $\begin{bmatrix} -20 & 44 \\ 8 & -42 \end{bmatrix}$ B) $\begin{bmatrix} -2 & -10 \\ 0 & -28 \\ -18 & -4 \end{bmatrix}$ C) $\begin{bmatrix} -20 & 8 \\ 44 & -42 \end{bmatrix}$ D) $\begin{bmatrix} -2 & 0 & 18 \\ -10 & 28 & 4 \end{bmatrix}$

5. Find the inverse of $\begin{bmatrix} 3 & -1 \\ -4 & 1 \end{bmatrix}$, if it exists.

A) does not exist B) $\begin{bmatrix} -1 & -1 \\ -4 & -3 \end{bmatrix}$ C) $\begin{bmatrix} 1 & 1 \\ 4 & 3 \end{bmatrix}$ D) $\begin{bmatrix} -1 & 1 \\ 4 & -3 \end{bmatrix}$

6. Solve the following system of equations using an inverse matrix.

$-4x - 2y + z = 6$
$-x - y - 2z = -3$
$2x + 3y - z = -4$

A) (1, 0, –2) B) (–1, 0, –2) C) (–1, 0, 2) D) (1, 0, 2)

7. The cheerleading squad is raising money for new uniforms by selling popcorn balls and calendars. Tanya raised $70 by selling 25 popcorn balls and 30 calendars. Nichole raised $53 by selling 20 popcorn balls and 22 calendars. What is the cost of one calendar?

A) $1 B) $1.25 C) $1.50 D) $1.75

8. When does A^{-1} for a matrix A not exist?

9. Which are undefined? $A + B$, $B - A$, AB, or BA? For any that are undefined, give a reason.

$A = \begin{bmatrix} 8 & 6 \\ 7 & -5 \end{bmatrix} \quad B = \begin{bmatrix} -3 \\ 0 \end{bmatrix}$

10. Find $2A - B$ if $A = \begin{bmatrix} -4x & 3 \\ 5z & -2 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 9y \\ 0 & -4 \end{bmatrix}$

11. Solve the system of equations using an inverse matrix.

$-3x + y + z = 2$
$5x + 2y - 4z = 21$
$x - 3y - 7z = -10$

12. Last week, the owner of a diner spent \$91.25 on 15 gallons of milk and 11 pounds of butter. This week, he spent \$70.40 on 12 gallons of milk and 8 pounds of butter. Find the cost of one pound of butter.

13. Given that $\begin{bmatrix} -2 & 3 \\ 5 & 1 \end{bmatrix} \cdot \begin{bmatrix} 3 & -1 \\ x & -2 \end{bmatrix} = \begin{bmatrix} 6 & y \\ 19 & -7 \end{bmatrix}$. Solve for x and y.

14. Billy's Restaurant ordered 200 flowers for Mother's Day. They ordered carnations at \$1.50 each, roses at \$5.75 each, and daisies at \$2.60 each. They ordered mostly carnations, and 20 fewer roses than daisies. The total order came to \$589.50. How many of each type of flower was ordered?