Pre Calculus
Ch8 Review #2

Name_____
Date_____Period_____

1. Solve the system of equations by using Cramer's Rule.

$$\begin{cases} 3x + y - z = -11 \\ x - y - z = -5 \\ x + 2y + 3z = 3 \end{cases}$$

2. Let $A = \begin{bmatrix} 2 & 3 & 2 \\ 1 & 0 & -6 \\ 1 & 1 & -2 \end{bmatrix}$ and $B = \begin{bmatrix} 0 \\ 4 \\ 1 \end{bmatrix}$ Solve for X *if* $AX = B$ (show work)

3. Evaluate using the method of expansion by minors and cofactors: $\begin{vmatrix} 2 & -2 & 0 \\ 3 & 1 & 0 \\ -2 & 3 & 1 \end{vmatrix}$

4. **Without a calculator**, solve the systems of equations by writing an augmented matrix and using Gauss-Jordan elimination (show all steps).

a) $\begin{cases} 2x-4y=-18 \\ -3x+y=17 \end{cases}$

b) $\begin{cases} 6x+5y=1 \\ 7x-2y=9 \end{cases}$

5. Let $A=\begin{bmatrix} 2 & 0 \\ -1 & 3 \end{bmatrix}$ and $B=\begin{bmatrix} 0 & 1 \\ 3 & -2 \end{bmatrix}$ **Without a calculator,** solve for X *if* $X+3A=B$ (show work)

6. If $A=\begin{bmatrix} 3 & 6 \\ -1 & -2 \end{bmatrix}$, find A^{-1}

7. Use a determinant to find the area of a triangle with vertices at $(-4,5)$, $(6,-1)$, $(6,10)$

8. Set up and use the determinant of a matrix to determine if (-3,-5), (2,5), and (-1,-1) are collinear.

9. Find the value of x that makes the triangle formed by the three ordered pairs have an area of 10.
$(-1,3),(2,x),(1,1)$

10. Solve for x *and* y if $\begin{bmatrix} 10 & -5 & 0 \\ 3 & 15 & 2y \\ -2 & 3x+2 & -3 \end{bmatrix} = \begin{bmatrix} 10 & -5 & 0 \\ 3 & 15 & 9 \\ -2 & 4 & -3 \end{bmatrix}$

11. Solve for x: (show work) $\begin{bmatrix} x & 2 \\ 4 & -3 \end{bmatrix}\begin{bmatrix} x & 1 \\ 0 & -1 \end{bmatrix} = \begin{bmatrix} 25 & 3 \\ 20 & 7 \end{bmatrix}$

12. Five hundred tickets were sold for one performance of a play. The tickets for adults sold for \$7.50 and the tickets for children sold for \$4.00. A total of \$3312.50 worth of tickets was sold. How many of each kind of ticket were sold?