Name:_____

6.0 & 6.2 Matrix +/-/scalar/•/determinants/identity/inverse

1) Solve for *x* and *y* given that

$$\begin{bmatrix} x & 0 \\ 1 & 2 \end{bmatrix} \cdot \begin{bmatrix} 4 & -7 \\ 2 & 5 \end{bmatrix} = \begin{bmatrix} -32 & 56 \\ 8 & y \end{bmatrix}$$

2) Solve for *x* and *y* given that

$$\begin{bmatrix} 5 \\ 3 \end{bmatrix} \cdot \begin{bmatrix} x & -5 \end{bmatrix} = \begin{bmatrix} 30 & -25 \\ 18 & y \end{bmatrix}$$

3) Find AB.

$$A = \begin{bmatrix} -3 & 8 \\ -5 & -2 \\ 11 & 0 \end{bmatrix} \quad B = \begin{bmatrix} 8 & 9 & -6 & 4 \\ 0 & -4 & -1 & 2 \end{bmatrix}$$

4) Find BA

$$A = \begin{bmatrix} -2 & 1 \\ 3 & 4 \end{bmatrix} \quad B = \begin{bmatrix} 0 & 1 \\ 5 & -8 \end{bmatrix}$$

5) Two lacrosse teams submit equipment lists to their sponsors. Women's team: 5 sticks, 15 balls, and 16 uniforms. Men's team: 8 sticks, 22 balls, and 17 uniforms. Each stick costs $55, each ball costs $6, and each uniform costs $35. Use matrix multiplication to find the total cost of equipment for each team.

6)) The number of touchdowns (TD), field goals (FG), points after touchdown (PAT), and two-point conversions (2EP) for the three top teams in the high school league for this season is shown in the table below. The other table shows the number of points each type of score is worth. Use the information to determine the team that scored the most points.

Score	Points
TD	6
FG	3
PAT	1
2EP	2

Team	TD	FG	PAT	2EP
Tigers	27	7	21	2
Rams	24	12	18	3
Eagles	21	14	12	9

7) Which matrix is the inverse of $A = \begin{bmatrix} -4 & 3 \\ -5 & 4 \end{bmatrix}$

A) $\begin{bmatrix} 4 & -3 \\ 5 & -4 \end{bmatrix}$

B) $\begin{bmatrix} -4 & 3 \\ -5 & 4 \end{bmatrix}$

C) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

D) $\begin{bmatrix} -5 & 4 \\ -4 & 3 \end{bmatrix}$

8) Find the determinant and A^{-1} when $A = \begin{bmatrix} -5 & 10 \\ 4 & -8 \end{bmatrix}$

9) Solve the matrix equation A X = B for the matrix X.

$\begin{bmatrix} 1 & 6 \\ -7 & 13 \end{bmatrix} X = \begin{bmatrix} -5 & 18 \\ 35 & -16 \end{bmatrix}$

10) Solve for varable given the matrix has a determinant of 32.

$\begin{bmatrix} x-6 & -4 \\ -3 & x \end{bmatrix}$

11) Show that the two matrices are inverses of one another:

$A = \begin{bmatrix} 6 & -2 \\ -5 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 1 \\ 2.5 & 3 \end{bmatrix}$