

Matrix Test Review Stations with Communicators

GROUP I: Adding, Subtracting, and Scalar Multiplication

Solve for X when: $A = \begin{bmatrix} -2 & -1 \\ 1 & 0 \\ 3 & -4 \end{bmatrix}$ $B = \begin{bmatrix} 0 & 3 \\ 2 & 0 \\ -4 & -1 \end{bmatrix}$

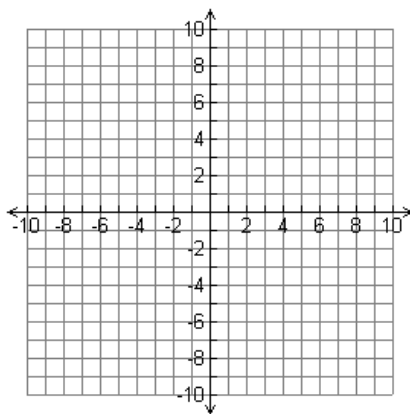
1.

2.

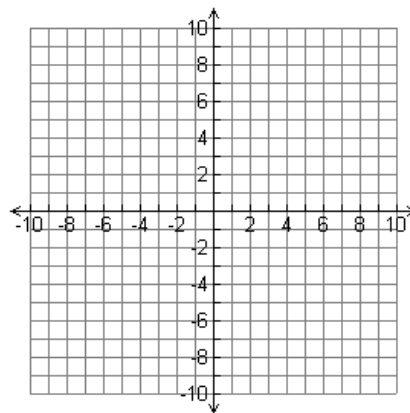
GROUP II: Determinants and inverses.

Use a determinant to find the area of the given triangles:

3.



4.



5.

6. $\begin{bmatrix} 7 & 3 \\ 5 & 2 \end{bmatrix}$

7. $\begin{bmatrix} 2 & 3 \\ 7 & 11 \end{bmatrix}$

8. $\begin{bmatrix} 8 & -3 \\ 4 & -2 \end{bmatrix}$

GROUP III: Solving systems using inverses.

9 - 11: Write the matrix equation, determine the determinant, find the inverse matrix, and solve for the solutions using inverses.

9.

10.

11.

GROUP IV: Solving systems using Cramer's Rule.

12.

13.

14.

GROUP V: Matrix Transformations.

Perform the indicated transformation: *(If you have to sketch the segment, point, or triangle to get a visual)*

$$A = \begin{bmatrix} 7 & 3 \\ 5 & 2 \end{bmatrix}$$

$$B = \begin{bmatrix} 2 & 3 \\ 7 & 11 \end{bmatrix}$$

$$C = \begin{bmatrix} 8 & -3 \\ 4 & -2 \end{bmatrix}$$

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

$$E = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$$

15.

16.

17.

18.

19.

20.

GROUP VI: Multiplication with matrices.

21.

22.

23.

GROUP VII: Determinants.

Evaluate each of the following:

(Do at least one of each by hand (show your work) the others can be done on the calculator.)

24.

25.

26.

27.

28.
$$\begin{vmatrix} 2 & 1 & 5 \\ -1 & 6 & 3 \\ 2 & -4 & 2 \end{vmatrix}$$

29.
$$\begin{vmatrix} -3 & 1 & 0 \\ 2 & -1 & 1 \\ 0 & 3 & 4 \end{vmatrix}$$

30.
$$\begin{vmatrix} 2 & -3 & 4 \\ 0 & 1 & -2 \\ 1 & 2 & -3 \end{vmatrix}$$

GROUP VIII: Adding, Subtracting, and Scalar Multiplication.

Perform the matrix operation(s): *(check with your calculator, but do these by hand)*

31.
$$\begin{bmatrix} 0 & 1 & -5 \\ 4 & 1 & 6 \end{bmatrix} + \begin{bmatrix} 10 & 3 & 11 \\ -2 & 8 & 3 \end{bmatrix}$$

32.
$$\begin{bmatrix} 5 & 1 & 10 \\ -1 & 0 & 0 \\ 2 & 3 & 4 \end{bmatrix} - \begin{bmatrix} 6 & 7 & 3 \\ 0 & 14 & 6 \\ 1 & -1 & 2 \end{bmatrix}$$

33.
$$\begin{bmatrix} 6 & 10 \\ 9 & 6 \\ 4 & -1 \end{bmatrix} + \begin{bmatrix} 2 & 1 \\ 0 & 7 \\ 4 & 7 \end{bmatrix}$$

34.
$$3 \begin{bmatrix} 4 & 6 & -1 \\ 10 & -5 & 2 \\ 2 & 11 & 1 \end{bmatrix}$$

35.
$$-2 \left(\begin{bmatrix} 6 & 4 \\ 0 & 3 \end{bmatrix} - \begin{bmatrix} 5 & 10 \\ 1 & 3 \end{bmatrix} \right)$$