

NAME: _____

1. If $A = \begin{bmatrix} -6 & 4 \\ 5 & -1 \end{bmatrix}$, find $4A$.

[A] $\begin{bmatrix} -2 & 8 \\ 9 & 3 \end{bmatrix}$ [B] $\begin{bmatrix} -24 & 16 \\ 20 & -4 \end{bmatrix}$

[C] $\begin{bmatrix} -24 & 20 \\ 16 & -4 \end{bmatrix}$ [D] $\begin{bmatrix} 2 & 12 \\ 13 & 7 \end{bmatrix}$

2. Given $A = \begin{bmatrix} 2 \\ 1 \\ -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 3 & 0 \end{bmatrix}$, find AB .

3. Multiply: $\begin{bmatrix} -9 & 8 \\ -11 & 5 \end{bmatrix} \begin{bmatrix} 6 & -5 \\ 8 & 9 \end{bmatrix}$

4. Given $A = \begin{bmatrix} 0 & 3 & 1 \\ 1 & -1 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 6 \\ 0 & 1 \\ 4 & -1 \end{bmatrix}$, find AB .

[A] $\begin{bmatrix} 4 & 1 \\ 2 & 5 \end{bmatrix}$ [B] $\begin{bmatrix} 6 & -3 & 1 \\ 1 & -1 & 0 \\ -1 & 13 & 0 \end{bmatrix}$

[C] $\begin{bmatrix} 0 & 6 \\ 0 & -1 \\ 0 & 0 \end{bmatrix}$ [D] $\begin{bmatrix} 4 & 2 \\ 1 & 5 \end{bmatrix}$

5. Which matrix is the product ZY ?

$Y = \begin{bmatrix} 5 & -1 & 3 \\ 7 & 5 & -8 \end{bmatrix}$ $Z = \begin{bmatrix} 2 & 5 \\ -7 & 3 \\ 8 & -9 \end{bmatrix}$

[A] $\begin{bmatrix} 45 & 23 & 46 \\ -14 & 22 & 3 \\ -23 & -53 & -48 \end{bmatrix}$ [B] $\begin{bmatrix} 10 & 35 \\ 7 & 15 \\ 3 & -12 \end{bmatrix}$

[C] $\begin{bmatrix} 41 & -5 \\ 43 & -22 \end{bmatrix}$ [D] $\begin{bmatrix} 45 & 23 & -34 \\ -14 & 22 & -45 \\ -23 & -53 & 96 \end{bmatrix}$

[E] $\begin{bmatrix} 41 & -5 \\ -85 & 122 \end{bmatrix}$

6. Given $A = \begin{bmatrix} 0 & -4 & 1 \\ -1 & -1 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -3 \\ 0 & 1 \\ -2 & -1 \end{bmatrix}$, find AB .

7. Use a graphing calculator to find BA , if possible.

$A = \begin{bmatrix} 0.3 & 2.5 & -1.7 \\ 5.2 & -1.4 & 0.6 \end{bmatrix}$ $B = \begin{bmatrix} -1.3 & 4.6 \\ -0.9 & 5.3 \\ 2.7 & 3.8 \end{bmatrix}$

8. If $A = \begin{bmatrix} 3 & 4 & 1 \\ -2 & 5 & 4 \\ 1 & 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & -3 & 1 \\ 1 & 5 & 3 \\ -4 & -2 & 4 \end{bmatrix}$, find AB .

[A] $\begin{bmatrix} 15 & 6 & 1 \\ 4 & 25 & 6 \\ -4 & -8 & 12 \end{bmatrix}$ [B] $\begin{bmatrix} 22 & 7 & -4 \\ -4 & 35 & 30 \\ -4 & -18 & 0 \end{bmatrix}$

[C] $\begin{bmatrix} 15 & 9 & 19 \\ -21 & 23 & 29 \\ -5 & 1 & 19 \end{bmatrix}$ [D] $\begin{bmatrix} 15 & -12 & 1 \\ -2 & 25 & 12 \\ -4 & -4 & 12 \end{bmatrix}$

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9. If $A = \begin{bmatrix} 4 & -5 & 1 \\ -1 & -2 & -3 \\ 3 & -4 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & -4 & -1 \\ -2 & 1 & -4 \\ -3 & 3 & -2 \end{bmatrix}$, find AB .

10. Find a scalar multiplication that will give this product:

$$\begin{bmatrix} -2 & 5 & -12 \\ 8 & 10 & -6 \end{bmatrix}$$

11. Compare the quantity in Column A with the quantity in Column B.

$$P = \begin{bmatrix} 3 & -2 & 5 \end{bmatrix} \quad Q = \begin{bmatrix} 4 \\ -3 \\ 5 \end{bmatrix} \quad R = \begin{bmatrix} -6 & 2 & 7 & 8 \end{bmatrix} \quad S = \begin{bmatrix} 5 \\ -3 \\ 6 \\ -1 \end{bmatrix}$$

Column A Column B

PQ

RS

[A] The quantity in Column A is greater.

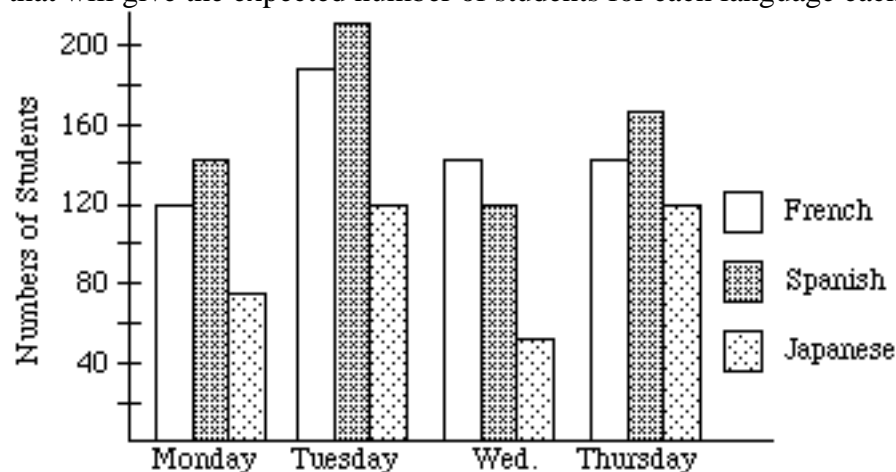
[B] The quantity in Column B is greater.

[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

12. A snack bar sells large soft drinks for \$1.50, medium soft drinks for \$1.00, and small soft drinks for \$.75. They also sell large juice drinks for \$2.50, medium juice drinks for \$1.75, and small juice drinks for \$1.25. On Thursday, they sold 230 large soft drinks and 127 large juice drinks, 178 medium soft drinks and 101 medium juice drinks, 126 small soft drinks and 74 small juice drinks. On Friday, they sold 380 large soft drinks and 202 large juice drinks, 351 medium soft drinks and 192 medium juice drinks, 287 small soft drinks and 215 small juice drinks. Use matrix multiplication to find the total amount received from selling the drinks both days.

13. The school expects enrollment to increase by 15% next year. Use scalar multiplication to find a matrix that will give the expected number of students for each language each night next year.



[1] B

[2]
$$\begin{bmatrix} 2 & 6 & 0 \\ 1 & 3 & 0 \\ -1 & -3 & 0 \end{bmatrix}$$

[3]
$$\begin{bmatrix} 10 & 117 \\ -26 & 100 \end{bmatrix}$$

[4] D

[5] D

[6]
$$\begin{bmatrix} -2 & -5 \\ -1 & 2 \end{bmatrix}$$

[7]
$$BA = \begin{bmatrix} 23.53 & -9.69 & 4.97 \\ 27.29 & -9.67 & 4.71 \\ 20.57 & 1.43 & -2.31 \end{bmatrix}$$

[8] C

[9]
$$\begin{bmatrix} 27 & -18 & 14 \\ 8 & -7 & 15 \\ 8 & -1 & 3 \end{bmatrix}$$

[10] Answers will vary. Sample: $2 \begin{bmatrix} -1 & 2.5 & -6 \\ 4 & 5 & -3 \end{bmatrix}$

[11] A

[12] \$3450.25

Answers may vary. Sample:

[13]
$$\begin{bmatrix} 138 & 161 & 81 & 207 \\ 230 & 138 & 161 & 138 \\ 58 & 161 & 184 & 138 \end{bmatrix} \text{ or } \begin{bmatrix} 138 & 230 & 58 \\ 161 & 138 & 161 \\ 81 & 161 & 184 \\ 207 & 138 & 138 \end{bmatrix}$$