

**Matrix Questions**

Question 1:

What is the inverse of the matrix:

$\begin{bmatrix} -6 & 2 \\ -4 & -3 \end{bmatrix}$ ?

*Solution:* ■  $\text{Matrix}(\begin{bmatrix} -3/26 & -1/13 \\ 2/13 & -3/13 \end{bmatrix})$

Question 2:

What is the transpose of the matrix:

$\begin{bmatrix} 9 & -9 & 4 \\ 3 & -1 & 2 \\ -3 & -3 & 0 \end{bmatrix}$ ?

*Solution:* ■  $\text{Matrix}(\begin{bmatrix} 9 & 3 & -3 \\ -9 & -1 & -3 \\ 4 & 2 & 0 \end{bmatrix})$

Question 3:

What is the determinant of the matrix:

$\begin{bmatrix} -8 & 6 \\ 4 & 6 \end{bmatrix}$ ?

*Solution:* ■ -72

Question 4:

What is the result of multiplying the matrices:

$\begin{bmatrix} -8 & 2 \\ 3 & -6 \end{bmatrix}$

and

$\begin{bmatrix} -6 & -3 \\ 0 & 6 \end{bmatrix}$ ?

*Solution:* ■  $\text{Matrix}(\begin{bmatrix} 48 & 36 \\ -18 & -45 \end{bmatrix})$

Question 5:

What is the inverse of the matrix:

$\begin{bmatrix} 1 & 2 \\ -6 & -7 \end{bmatrix}$ ?

*Solution:* ■  $\text{Matrix}(\begin{bmatrix} -7/5 & -2/5 \\ 6/5 & 1/5 \end{bmatrix})$

Question 6:

What is the determinant of the matrix:  
[[3, -3], [3, -5]]?

*Solution:* ■ -6

Question 7:

What is the inverse of the matrix:  
[[-2, -6], [1, -6]]?

*Solution:* ■  $\text{Matrix}(\left[\left[-\frac{1}{3}, \frac{1}{3}\right], \left[-\frac{1}{18}, -\frac{1}{9}\right]\right)$

Question 8:

What is the transpose of the matrix:  
[[-9, 1, -5], [-6, 2, 9], [-2, -8, 0]]?

*Solution:* ■  $\text{Matrix}(\left[\left[-9, -6, -2\right], \left[1, 2, -8\right], \left[-5, 9, 0\right]\right)$

Question 9:

What is the transpose of the matrix:  
[[7, -4, -8], [6, 9, 2], [3, -1, 5]]?

*Solution:* ■  $\text{Matrix}(\left[\left[7, 6, 3\right], \left[-4, 9, -1\right], \left[-8, 2, 5\right]\right)$