Name

Calculate the inverse of a 2 by 2 matrix

1 The determinant is -18 and the adjoint is shown. Which shows column 2 of the inverse? Fill only that column and leave the other entries blank. Use $A^{-1} = \frac{1}{\vert A \vert} \text{adj}(A)$.

A $\begin{bmatrix} \square & 0.5 \\ \square & 0 \end{bmatrix}$

B $\begin{bmatrix} \square & -1 \\ \square & 1.25 \end{bmatrix}$

C $\begin{bmatrix} \square & -0.5 \\ \square & 0 \end{bmatrix}$

D $\begin{bmatrix} \square & 0.25 \\ \square & 0.5 \end{bmatrix}$

2 The determinant is -48 and the adjoint is shown. What is the entry at row 1, column 2 of the inverse?

A 1.56	B 0.81	C -1.19
D 0.06	E -0.44	F 0.31

3 The determinant is 63 and the adjoint is shown. Which shows column 2 of the inverse? Fill only that column and leave the other entries blank.

A $\begin{bmatrix} \square & -0.05 \\ \square & -0.1 \end{bmatrix}$

B $\begin{bmatrix} \square & -1.55 \\ \square & -0.1 \end{bmatrix}$

C $\begin{bmatrix} \square & -1.05 \\ \square & 1.15 \end{bmatrix}$

D $\begin{bmatrix} \square & 1.2 \\ \square & 0.65 \end{bmatrix}$

4 What does this matrix operation produce?

$$\text{adj}(A)$$

A the matrix where each entry is replaced by the determinant of its minor matrix

B the matrix that multiplies with A to give the identity matrix

C the transpose of the cofactor matrix

D a single number that describes a square matrix and shows whether it has an inverse

E the matrix formed by swapping the rows and columns of A

5 Which shows how to calculate the determinant of this matrix?

$$\begin{bmatrix} -9 & -3 \\ -7 & 4 \end{bmatrix}$$

A $(-9 \cdot 4) - (-3 \cdot -7)$

B $(-9 \cdot -3) - (-7 \cdot 4)$

C $(-3 \cdot -7) - (-9 \cdot 4)$

6 What is the determinant of this matrix?

$$\begin{bmatrix} 6 & -7 \\ -4 & -7 \end{bmatrix}$$

A -70	B -73	C -71
D -69	E -65	F -76

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7 Which matrix is the transpose of this matrix?

$$\begin{bmatrix} -3 & -8 \\ -7 & -7 \end{bmatrix}$$

A

$$\begin{bmatrix} 1 & -7 \\ -8 & -7 \end{bmatrix}$$

B

$$\begin{bmatrix} -3 & -7 \\ -8 & -9 \end{bmatrix}$$

C

$$\begin{bmatrix} -3 & -7 \\ -8 & -7 \end{bmatrix}$$

8 The determinant is -68 and the adjoint is shown. Which is the inverse matrix?

$$\begin{bmatrix} -8 & 2 \\ 6 & 7 \end{bmatrix}$$

A

$$\begin{bmatrix} 0.12 & 1.97 \\ -0.09 & -0.1 \end{bmatrix}$$

B

$$\begin{bmatrix} 0.12 & -0.03 \\ -0.09 & -0.1 \end{bmatrix}$$

C

$$\begin{bmatrix} 0.12 & -0.03 \\ -0.09 & 0.9 \end{bmatrix}$$

D

$$\begin{bmatrix} 2.12 & -0.03 \\ -0.09 & -0.1 \end{bmatrix}$$

9 Which is the inverse of this matrix? Use $A^{-1} = \frac{1}{\vert A \vert} \text{adj}(A)$.

$$\begin{bmatrix} -3 & 6 \\ -5 & -1 \end{bmatrix}$$

A

$$\begin{bmatrix} -0.09 & 0.18 \\ 1.85 & -0.03 \end{bmatrix}$$

B

$$\begin{bmatrix} 1.91 & 0.18 \\ -0.15 & -0.03 \end{bmatrix}$$

C

$$\begin{bmatrix} -0.09 & 0.18 \\ -0.15 & -0.03 \end{bmatrix}$$

D

$$\begin{bmatrix} -0.09 & 2.18 \\ -0.15 & -0.03 \end{bmatrix}$$