

Math Sheet

Name _____ Score _____ / 12 Teacher _____ Date _____

Matrix Determinants 2×2

Find each determinant. Use the given variable value when provided. Show your work.

1. $\det(A)$

$$A = \begin{bmatrix} -2 & 5 \\ -4 & 6 \end{bmatrix}$$

2. $\det(A)$

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

3. $\det(A)$

$$A = \begin{bmatrix} 0 & 5 \\ 1 & 4 \end{bmatrix}$$

4. $\det(A)$

$$A = \begin{bmatrix} -3 & 0 \\ 1 & 3 \end{bmatrix}$$

5. $\det(A)$

$$A = \begin{bmatrix} 2 & 1 \\ 5 & 1 \end{bmatrix}$$

6. $\det(A)$

$$A = \begin{bmatrix} 4 & -2 \\ -1 & 3 \end{bmatrix}$$

7. D

$$D = \begin{vmatrix} 2 & -4 \\ -1 & 5 \end{vmatrix}$$

8. D

$$D = \begin{vmatrix} 1 & 5 \\ 3 & -1 \end{vmatrix}$$

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9. D

$$D = \begin{vmatrix} 0 & -3 \\ -4 & 1 \end{vmatrix}$$

10. D

$$D = \begin{vmatrix} 6 & -6 \\ -6 & 4 \end{vmatrix}$$

11. D

$$D = \begin{vmatrix} -4 & 0 \\ 6 & -6 \end{vmatrix}$$

12. D

$$D = \begin{vmatrix} 5 & -4 \\ 3 & 1 \end{vmatrix}$$

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Answer Key

Find each determinant. Use the given variable value when provided. Show your work.

1. $\det(A)$

$$A = \begin{bmatrix} -2 & 5 \\ -4 & 6 \end{bmatrix}$$

$$\det(A) = (-2)(6) - (5)(-4)$$

$$ad = -12$$

$$bc = -20$$

$$\det(A) = ad - bc = 8$$

2. $\det(A)$

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

$$\det(A) = (-1)(1) - (-3)(5)$$

$$ad = -1$$

$$bc = -15$$

$$\det(A) = ad - bc = 14$$

3. $\det(A)$

$$A = \begin{bmatrix} 0 & 5 \\ 1 & 4 \end{bmatrix}$$

$$\det(A) = (0)(4) - (5)(1)$$

$$ad = 0$$

$$bc = 5$$

$$\det(A) = ad - bc = -5$$

Matrix Determinants 2×2

Answer Key

Find each determinant. Use the given variable value when provided. Show your work.

4. $\det(A)$

$$A = \begin{bmatrix} -3 & 0 \\ 1 & 3 \end{bmatrix}$$

$$\det(A) = (-3)(3) - (0)(1)$$

$$ad = -9$$

$$bc = 0$$

$$\det(A) = ad - bc = -9$$

5. $\det(A)$

$$A = \begin{bmatrix} 2 & 1 \\ 5 & 1 \end{bmatrix}$$

$$\det(A) = (2)(1) - (1)(5)$$

$$ad = 2$$

$$bc = 5$$

$$\det(A) = ad - bc = -3$$

6. $\det(A)$

$$A = \begin{bmatrix} 4 & -2 \\ -1 & 3 \end{bmatrix}$$

$$\det(A) = (4)(3) - (-2)(-1)$$

$$ad = 12$$

$$bc = 2$$

$$\det(A) = ad - bc = 10$$

Matrix Determinants 2×2

Answer Key

Find each determinant. Use the given variable value when provided. Show your work.

7. D

$$D = \begin{vmatrix} 2 & -4 \\ -1 & 5 \end{vmatrix}$$

$$D = (2)(5) - (-4)(-1)$$

$$ad = 10$$

$$bc = 4$$

$$D = ad - bc = 6$$

8. D

$$D = \begin{vmatrix} 1 & 5 \\ 3 & -1 \end{vmatrix}$$

$$D = (1)(-1) - (5)(3)$$

$$ad = -1$$

$$bc = 15$$

$$D = ad - bc = -16$$

9. D

$$D = \begin{vmatrix} 0 & -3 \\ -4 & 1 \end{vmatrix}$$

$$D = (0)(1) - (-3)(-4)$$

$$ad = 0$$

$$bc = 12$$

$$D = ad - bc = -12$$

Matrix Determinants 2×2

Answer Key

Find each determinant. Use the given variable value when provided. Show your work.

10. D

$$D = \begin{vmatrix} 6 & -6 \\ -6 & 4 \end{vmatrix}$$

$$D = (6)(4) - (-6)(-6)$$

$$ad = 24$$

$$bc = 36$$

$$D = ad - bc = -12$$

11. D

$$D = \begin{vmatrix} -4 & 0 \\ 6 & -6 \end{vmatrix}$$

$$D = (-4)(-6) - (0)(6)$$

$$ad = 24$$

$$bc = 0$$

$$D = ad - bc = 24$$

12. D

$$D = \begin{vmatrix} 5 & -4 \\ 3 & 1 \end{vmatrix}$$

$$D = (5)(1) - (-4)(3)$$

$$ad = 5$$

$$bc = -12$$

$$D = ad - bc = 17$$