



Matrix Review



Classroom: Math Examples

Due:

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Matrix Format

Use matrices A, B, and C to answer the following questions.

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

$$B = [8 \quad -1 \quad -4]$$

$$C = \begin{bmatrix} 5 & -12 & 4 \\ 7 & 0 & 13 \\ -8 & 5 & 9 \end{bmatrix}$$

1) What are the dimensions of matrix A?

3 x 2

2) What are the dimensions of matrix B?

1 x 3

3) What is C_{31} ?

-8

Matrix addition and subtraction.

$$4) \begin{bmatrix} 5 & -14 \\ 0 & 4 \end{bmatrix} + \begin{bmatrix} 0 & 8 \\ -7 & 11 \end{bmatrix} =$$

Show Work

$$\begin{array}{l} 5 + 0 = 5 \qquad (-14) + 8 = -6 \\ 0 + (-7) = -7 \qquad 4 + 11 = 15 \end{array}$$

$$\begin{bmatrix} 5 & -6 \\ -7 & 15 \end{bmatrix}$$

$$5) \begin{bmatrix} 6 & -3 \\ 7 & -7 \end{bmatrix} - \begin{bmatrix} 9 & -2 \\ 4 & -1 \end{bmatrix} =$$

Show Work

$$\begin{array}{l} 6 - 9 = -3 \qquad (-3) - (-2) = -1 \\ 7 - 4 = 3 \qquad (-7) - (-1) = -6 \end{array}$$

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

Determinants

Find the determinant for matrices D and E.

$$6) D = \begin{bmatrix} 5 & -6 \\ 8 & 1 \end{bmatrix}$$

Show Work

$$\begin{array}{l} (5 \times 1) - (-6 \times 8) = 5 - (-48) \\ = 5 + 48 \\ = 53 \end{array}$$

53

$$7) E = \begin{bmatrix} 2 & -11 & 5 \\ 7 & 1 & -4 \\ 0 & 8 & -3 \end{bmatrix} \quad \begin{array}{l} A = 1(-3) - 8(-4) = 29 \\ B = 7(-3) - 0(-4) = -21 \\ C = 7(8) - 1(0) = 56 \end{array}$$

Show Work

$$\begin{array}{l} 2(A) - (-11)(B) + 5(C) \\ = 2(29) + 11(-21) + 5(56) \\ = 58 - 231 + 280 \\ = 107 \end{array}$$

107

