Matrices Order Problems

Worksheet: Order of a Matrix

Instructions:

Solve the following problems based on the order of a matrix.

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1. Identifying the Order

Determine the order of the following matrices:

(a) $A = \begin{bmatrix} 2 & 5 & 8 \\ 1 & 3 & 7 \end{bmatrix}$

(b) $B = \begin{bmatrix} 4 & 9 \\ 2 & 6 \\ 5 & 7 \\ 8 & 1 \end{bmatrix}$

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2. Counting Elements

Find the number of elements in the given matrices:

(a) A **4 × 5** matrix
(b) A **7 × 2** matrix

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3. Classifying Matrices

State whether the following matrices are **square** or **rectangular**:

(a) $C = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$

(b) $D = \begin{bmatrix} 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \end{bmatrix}$

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4. Constructing Matrices

Construct a matrix of the given order using numbers from **1 to 10**:

(a) A **3 × 2** matrix
(b) A **2 × 4** matrix

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5. Finding Order from Representation

Identify the order of the following matrices:

(a) $E = \begin{bmatrix} 4 & 7 & 1 \\ 5 & 8 & 2 \\ 6 & 9 & 3 \\ 10 & 11 & 12 \end{bmatrix}$

(b) $F = \begin{bmatrix} 3 & 5 & 7 & 9 \\ 2 & 4 & 6 & 8 \end{bmatrix}$

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6. True or False

(a) A **3 × 4** matrix has 7 elements.
(b) A square matrix must always have equal rows and columns.

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7. Word Problem

A classroom has **6 rows** of benches, and each row contains **5 benches**. If we represent the seating arrangement as a matrix, what would be the order of the matrix?

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8. Multiple Choice

A matrix has **5 rows** and **1 column**. What is its order?

(A) 1 × 5
(B) 5 × 1
(C) 5 × 5
(D) 1 × 1

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9. Matching the Matrix to its Order

Match the given matrices with their correct order:

Matrix	Order Options
$G = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$	(A) 2 × 3
$H = \begin{bmatrix} 7 & 8 & 9 \\ 10 & 11 & 12 \end{bmatrix}$	(B) 3 × 2
$I = \begin{bmatrix} 13 & 14 & 15 & 16 \end{bmatrix}$	(C) 1 × 4

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10. Creating a Custom Matrix

Create your own **4 × 3** matrix using any 12 numbers of your choice.

This worksheet will help reinforce the understanding of matrix order through different types of problems.