Matrices Order Problems

Answer Key: Order of a Matrix Worksheet

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1. Identifying the Order

(a) A has **2 rows** and **3 columns** → Order = **2 × 3**
(b) B has **4 rows** and **2 columns** → Order = **4 × 2**

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2. Counting Elements

(a) A **4 × 5** matrix has **4 × 5 = 20** elements.
(b) A **7 × 2** matrix has **7 × 2 = 14** elements.

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3. Classifying Matrices

(a) C has order **3 × 3** → **Square Matrix**
(b) D has order **2 × 4** → **Rectangular Matrix**

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4. Constructing Matrices

(a) Example of a **3 × 2** matrix:

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$$

(b) Example of a **2 × 4** matrix:

$$\begin{bmatrix} 7 & 8 & 9 & 10 \\ 1 & 2 & 3 & 4 \end{bmatrix}$$

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5. Finding Order from Representation

(a) E has **4 rows** and **3 columns** → Order = **4 × 3**
(b) F has **2 rows** and **4 columns** → Order = **2 × 4**

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6. True or False

(a) **False** (A **3 × 4** matrix has **12** elements, not 7.)
(b) **True** (A square matrix always has **m = n**.)

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7. Word Problem

The classroom seating arrangement is represented by a **6 × 5** matrix (6 rows, 5 benches in each row).

8. Multiple Choice

A matrix with **5 rows** and **1 column** has order **5 × 1**.
Correct answer: (B) 5 × 1

9. Matching the Matrix to its Order

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

10. Creating a Custom Matrix

Example of a **4 × 3** matrix:

$$\begin{bmatrix} 10 & 20 & 30 \\ 40 & 50 & 60 \\ 70 & 80 & 90 \\ 100 & 110 & 120 \end{bmatrix}$$

(Any 12 numbers arranged in a **