

Worksheet: Matrices

CBSE · Class 12 · Mathematics · 8 questions · 29 marks

Name: _____

Date: _____

Score: _____ / 29

Q1. A matrix has 15 elements. What are all the possible orders it can have? *[2 marks]*

Q2. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, find AB and BA . *[3 marks]*

Q3. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 \\ -1 & 2 \end{bmatrix}$, verify that $(AB)' = B'A'$. *[3 marks]*

Q4. Express $A = \begin{bmatrix} 4 & 2 \\ 6 & 8 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric matrix. *[5 marks]*

Q5. Why can't a matrix have two different inverses? *[3 marks]*

Q6. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 5A + 7I = 0$ (the zero matrix). *[5 marks]*

Q7. If A is a skew-symmetric matrix of odd order, what can you say about its determinant? (Beyond this chapter's scope, but a natural extension — just reason about the diagonal here.) *[4 marks]*

Q8. If A is of order 2×3 and B is of order 3×2 , is AB defined? Is BA defined? What are their orders? *[4 marks]*
