Worksheet: Matrices

IB · 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=[[1,2],[3,4]] and B=[[0,1],[1,0]], find AB and BA. *[3 marks]*

Q3. If A=[[1,2],[3,4]] and B=[[0,1],[-1,2]], verify that (AB)'=B'A'. *[3 marks]*

Q4. Express A=[[4,2],[6,8]] 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=[[3,1],[-1,2]], 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 2x3 and B is of order 3x2, is AB defined? Is BA defined? What are their orders? *[4 marks]*