1.2 Matrices: 10-minute Pack

EDEXCEL 9FM0 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 M = [[3,2],[5,4]].

(a) Find det(M). **(1)**

(b) Find M^{-1}. **(2)**

(c) Hence use matrices to solve the simultaneous equations $3x + 2y = 8$ and $5x + 4y = 14$. **(3)**

(Total for Question 1 is 6 marks)

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Mark scheme · 1.2 Matrices: 10-minute Pack

Question 1

(a) det(M) = 2 cao **B1**

(a) Answer: det(M) = 2

(b) correct adjugate [[4,-2],[-5,3]] with 1/det(M) used, ft their det(M) **M1**

(b) M^{-1} = [[2,-1],[-2.5,1.5]] oe cao **A1**

(b) Answer: M^{-1} = (1/2)[[4,-2],[-5,3]] = [[2,-1],[-2.5,1.5]]

(c) writing the system as $M[x,y]^T = [8,14]^T$ and using $[x,y]^T = M^{-1}[8,14]^T$ (ft their M^{-1}) **M1**

(c) x = 2 cao **A1**

(c) y = 1 cao **A1**

(c) Answer: x = 2, y = 1

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