HIGHER

3.4 Vectors in Two Dimensions: Notation, Magnitude and Arithmetic: 10-minute Pack

EDEXCEL 4MA1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Vector u is shown in bold notation as u = 4i - 2j. Write u as a column vector, using column-vector notation for two-dimensional vectors.

(Total for Question 1 is 1 mark)

2 Given s = [-2; 6], find -2s and give your answer in column-vector form.

(Total for Question 2 is 2 marks)

3 The vector v = [8; 15].
Find |v|, the magnitude of v. Give your answer as an integer or as a surd in its simplest form.

(Total for Question 3 is 2 marks)

4 The vector v = [6; 8]. Calculate the magnitude, |v|, of v to 3 significant figures.

(Total for Question 4 is 2 marks)

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Mark scheme · 3.4 Vectors in Two Dimensions: Notation, Magnitude and Arithmetic: 10-minute Pack

Question 1

u = [4; -2] cao **B1**

Answer: [4; -2]

Question 2

multiplies each component of s by -2 **M1**

-2s = [4; -12] cao **A1**

Answer: [4; -12]

Question 3

uses $|v| = \sqrt{(8)^2 + (15)^2} = \sqrt{289}$ **M1**

$|v| = 17$ **A1**

Answer: $|v| = 17$

Question 4

uses Pythagoras: $|v| = \sqrt{6^2 + 8^2}$ **M1**

correct magnitude 10.0 to 3 s.f., cao **A1**

Answer: 10.0

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