

sample2011

Write your SID here →

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The University of Sydney
**School of Mathematics
& Statistics**
MATH1002 Sample Quiz.

Family Name :
Other Names :
Day/time/room :
Signature :

The real quiz (15 questions) lasts 40 minutes and covers all content relating to vectors, lines and planes.

This sample quiz deals only with vectors and should take about 10 to 15 minutes.

Similar questions on vectors will appear in the real quiz.

Calculators are permitted but not needed.

Use a blue or black pen.

Marks are awarded only for what is written in the answer boxes. **Your working is not marked.**

<i>Answer Box for Question 1</i>	<i>Answer Box for Question 2</i>
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<i>Answer Box for Question 3</i>	<i>Answer Box for Question 4</i>	<i>Answer Box for Question 5</i>
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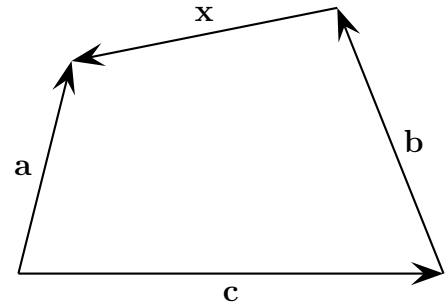
Students are advised to pay particular attention to the following tutorial questions:

- Exercises Sheet 1 - Questions 2, 5
- Exercises Sheet 2 - Questions 2, 3, 5, 7, 10, 11, 13.
- Exercises Sheet 3 - Questions 4, 5, 7, 8, 11.
- Exercises Sheet 4 - Questions 2, 4, 5, 7, 11, 12.
- Exercises Sheet 5 - Questions 4, 5, 6, 10, 12, 13, 15.

SAMPLE QUESTIONS FOR QUIZ 1

When you have finished, write your answers into the answer boxes on the front. Take care when transcribing your answers. Note that your working will NOT be marked. Use any blank spaces for rough working.

1. Find the vector x in terms of the vectors a , b , c .



2. Given that $\mathbf{a} = 3\mathbf{i} - 2\mathbf{j} + \mathbf{k}$ and $\mathbf{b} = \mathbf{i} + \mathbf{j} + 4\mathbf{k}$, find $|\mathbf{a} + \mathbf{b}|$.

3. If $\mathbf{u} = \mathbf{i} + 2\mathbf{k}$ and $\mathbf{v} = \mathbf{i} + \mathbf{j} + \mathbf{k}$, find the cosine of the angle between \mathbf{u} and \mathbf{v} .

4. If $\mathbf{u} = \mathbf{i} + 2\mathbf{k}$ and $\mathbf{v} = \mathbf{i} + \mathbf{j} + \mathbf{k}$, find $\mathbf{u} \times \mathbf{v}$.

5. Given that $\mathbf{a} \times \mathbf{b} = \mathbf{i} + 2\mathbf{j}$ and $\mathbf{b} \times \mathbf{c} = \mathbf{j} - \mathbf{k}$, find $\mathbf{b} \times (2\mathbf{a} + \mathbf{b} + \mathbf{c})$.

Solutions

1. $a - b - c$

2. $\sqrt{42}$

3. $\frac{3}{\sqrt{5}\sqrt{3}}$

4. $-2i + j + k$

5. $-2i - 3j - k$