Mathematics: Extension 1

Vectors Q2 transcript

 (Duration 2 minute 19 seconds)

This is the HSC hub Mathematics curriculum support from the New South Wales Department of Education, my name is Daniel Proctor. This video provides a solution to question two from the sample examination provided by the New South Wales Education Standards Authority for the Mathematics Extension one course. This question looks at vectors.

The solution provided in this video demonstrates one way to unpack a question. There may be other methods and we encourage you to discuss any alternative methods with your teacher.

This question asks us to determine the vector OP in terms of the defined vectors a and h. Press pause now to read the question.

When answering a question provided with a diagram like this one, students should be willing to supplement the diagram with extra relevant information by drawing on it. This question defines the vector OH equal to h. Knowing that equal vectors are parallel and equal in length means that the vectors DF and AC also equal to the vector h.

The question also defines the vector OA equal to a.

The vector OP can be determined by following the vector path from O to P. In this case, following the vector a from the O to the point A and then following the vector h from the point A to the point P. However, we only follow the vector H for three quarters of its length.

Therefore, the vector OP is represented as the vector a plus three quarters of the vector h, giving D as the solution.

End of transcript