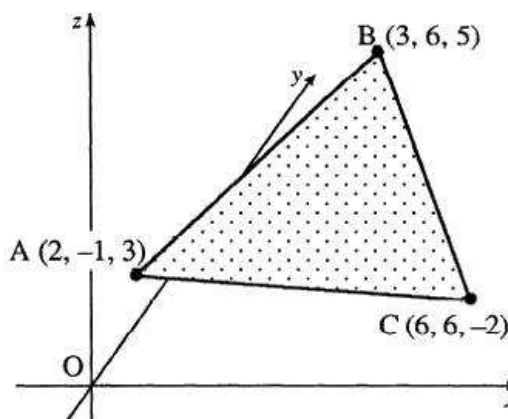


vectors

- [SQA] 1. A triangle ABC has vertices
A (2, -1, 3), B(3, 6, 5) and C (6, 6, -2).

- (a) Find \vec{AB} and \vec{AC} .
(b) Calculate the size of angle BAC.
(c) Hence find the area of the triangle.



(2)
(5)
(2)

- [SQA] 2. The vector $ai + bj + k$ is perpendicular to both the vectors $i - j + k$ and $-2i + j + k$.

Find the values of a and b .

3

- [SQA] 3. Calculate the length of the vector $2i - 3j + \sqrt{3}k$.

2

- [SQA] 4. The position vectors of the points P and Q are $\mathbf{p} = -i + 3j + 4k$ and $\mathbf{q} = 7i - j + 5k$ respectively.

- (a) Express \vec{PQ} in component form.
(b) Find the length of PQ.

2

1

- [SQA] 5. Show that the vectors $\mathbf{a} = 2i + 3j - k$ and $\mathbf{b} = 3i - j + 3k$ are perpendicular.

3

- [SQA] 6. Show that P(2,2,3), Q(4,4,1) and R(5,5,0) are collinear and find the ratio in which Q divides PR.

4

[END OF QUESTIONS]