

4. Given that $\vec{PQ} = -3\mathbf{i} + 12\mathbf{j}$

(a) find $|\vec{PQ}|$, giving your answer in simplest form.

(2)

Given also that relative to a fixed origin O

- the point P has position vector $9a\mathbf{i} - 4b\mathbf{j}$
- the point Q has position vector $6b\mathbf{i} + 15a\mathbf{j}$

where a and b are constants,

(b) find the value of a and the value of b .

(3)