

1. [In this question position vectors are given relative to a fixed origin O .]

A particle P moves with constant acceleration $(\mathbf{i} - 2\mathbf{j}) \text{ m s}^{-2}$.

At time $t = 0$, the particle is at the point A with position vector $(2\mathbf{i} + 5\mathbf{j}) \text{ m}$ and is moving with velocity $\mathbf{u} \text{ m s}^{-1}$.

At time $t = 3 \text{ s}$, P is at the point B with position vector $(-2.5\mathbf{i} + 8\mathbf{j}) \text{ m}$.

Find \mathbf{u} .

(Total 4 marks)