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3. A particle P of mass 0.2 kg is moving with velocity $(4\mathbf{i} - 3\mathbf{j})\,\text{m s}^{-1}$

The particle receives an impulse $\lambda(\mathbf{i} + \mathbf{j})\,\text{N s}$, where λ is a constant.

Immediately after receiving the impulse, the speed of P is $7\,\text{m s}^{-1}$

Find the possible values of λ

(6)

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Question 3 continued

Q3

(Total 6 marks)