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3. A particle P of mass 0.4 kg is moving with velocity $u\mathbf{i}$ m s^{-1}, where u is a positive constant. The particle receives an impulse $(3\mathbf{i} + 6\mathbf{j})$ N s.

Immediately after receiving the impulse, the speed of P is $2u$ m s^{-1}.

Find the value of u.

(5)

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Question 3 continued

Q3

(Total 5 marks)