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1. A particle of mass 0.5 kg is moving with velocity $(2\mathbf{i} + 4\mathbf{j})\,\text{m s}^{-1}$ when it receives an impulse of $(-4\mathbf{i} + 6\mathbf{j})\,\text{N s}$.

(a) Find the speed of the particle immediately after it receives the impulse.

(5)

(b) Find the size of the angle between the direction of motion of the particle immediately before it receives the impulse and the direction of motion of the particle immediately after it receives the impulse.

(3)

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Question 1 continued

Q1

(Total 8 marks)