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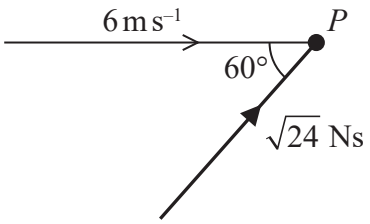


Figure 2

A particle P of mass 0.75 kg is moving along a straight line on a horizontal surface. At the instant when the speed of P is $6\,\text{m s}^{-1}$, it receives an impulse of magnitude $\sqrt{24}$ Ns. The impulse acts in the plane of the horizontal surface. At the instant when P receives the impulse, the line of action of the impulse makes an angle of 60° with the direction of motion of P, as shown in Figure 2.

Find

(i) the speed of P immediately after receiving the impulse,

(ii) the size of the angle between the direction of motion of P immediately before receiving the impulse and the direction of motion of P immediately after receiving the impulse.

(7)

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Question 3 continued

Q3

(Total 7 marks)