

- 5 A particle P of mass m kg is projected vertically upwards from a point O , with speed 20 ms^{-1} , and moves under gravity. There is a resistive force of magnitude $2mv$ N, where $v \text{ ms}^{-1}$ is the speed of P at time t s after projection.

- (a) Find an expression for v in terms of t , while P is moving upwards. [6]

[illegible]

The displacement of P from O is x m at time t s.

- (b) Find an expression for x in terms of t , while P is moving upwards. [2]

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- (c) Find, correct to 3 significant figures, the greatest height above O reached by P . [2]

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