

①

An aircraft takes off on a straight runway AB of length 1.1 km with initial speed 5 ms^{-1} . The aircraft starts from A moving with constant accelerates 4.8 ms^{-2} , leaving the runway at C, 15 s later.

Find (a) The speed of aircraft when it leaves the runway.

(2 marks)

(b) The distance BC.

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(3 marks)

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- ② Two particles P and Q are moving on parallel horizontal tracks in the same direction. At point X , P which is moving with speed 16 ms^{-1} and decelerating uniformly at 6 ms^{-2} passes Q which is moving with speed 8 ms^{-1} and accelerating uniformly at 2 ms^{-2} .

Find (a) The distance of Q from X when the velocities of P and Q are equal. (4 marks)

(b) The velocity of P when Q overtakes P .

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(5 marks)

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