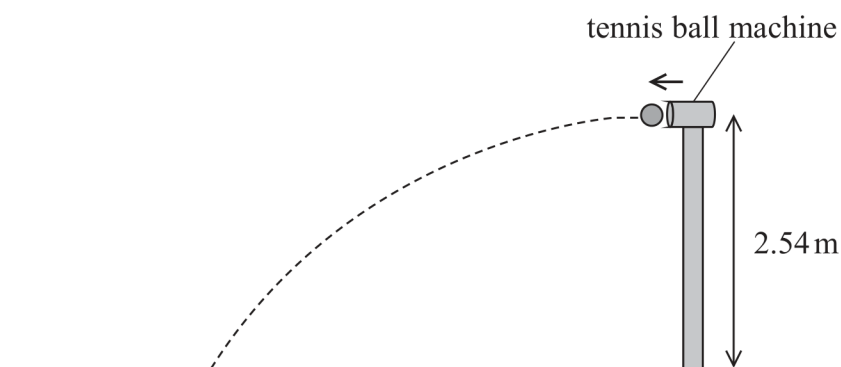


- 13 Tennis players can practise using a tennis ball machine. The machine projects tennis balls horizontally from a height of 2.54 m, as shown.



- (a) (i) Show that the time taken for a ball to reach the ground is about 0.7 s.

(2)

- (ii) The ball lands on the ground at a horizontal distance of 17.89 m from the machine.

Calculate the velocity of the ball as it is projected from the machine.

(2)

Velocity =



- (b) The initial velocity of the ball, as it is projected from the machine, can be increased.

Explain how increasing the initial velocity would affect the angle at which the ball hits the ground.

(3)

(Total for Question 13 = 7 marks)