

- 2 A ball is thrown from a point P with an initial velocity u of 12 m s^{-1} at 50° to the horizontal, as illustrated in Fig. 2.1.

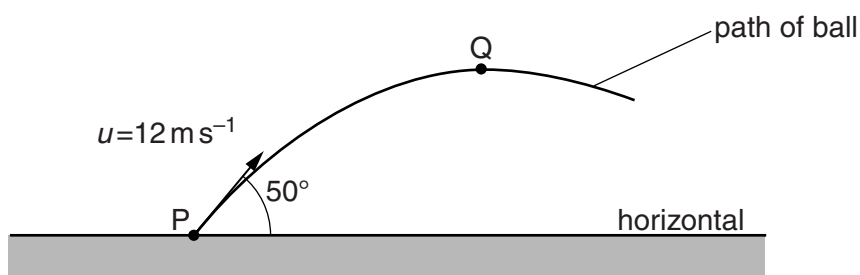


Fig. 2.1

The ball reaches maximum height at Q.

Air resistance is negligible.

(a) Calculate

- (i)** the horizontal component of u ,

horizontal component = m s^{-1} [1]

- (ii)** the vertical component of u .

vertical component = m s^{-1} [1]

- (b)** Show that the maximum height reached by the ball is 4.3 m.

[2]

- (c)** Determine the magnitude of the displacement PQ.

displacement = m [4]

[Total: 8]

[Turn over]