

- 2 A ball is thrown from a point P, which is at ground level, as illustrated in Fig. 2.1.

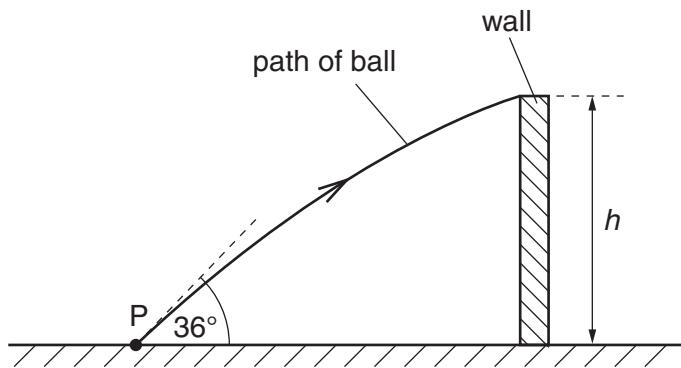


Fig. 2.1

The initial velocity of the ball is 12.4 m s^{-1} at an angle of 36° to the horizontal. The ball just passes over a wall of height h . The ball reaches the wall 0.17 s after it has been thrown.

- (a) Assuming air resistance to be negligible, calculate

- (i) the horizontal distance of point P from the wall,

$$\text{distance} = \dots \text{m} [2]$$

- (ii) the height h of the wall.

$$h = \dots \text{m} [3]$$

- (b) A second ball is thrown from point P with the same velocity as the ball in (a). For this ball, air resistance is not negligible.
This ball hits the wall and rebounds.

On Fig. 2.1, sketch the path of this ball between point P and the point where it first hits the ground. [2]