

- 7 In this question the x - and y -directions are horizontal and vertically upwards respectively and the origin is on horizontal ground.

A ball is thrown from a point 5 m above the origin with an initial velocity $\begin{pmatrix} 14 \\ 7 \end{pmatrix} \text{ m s}^{-1}$.

- (a) Find the position vector of the ball at time t s after it is thrown. [3]
- (b) Find the distance between the origin and the point at which the ball lands on the ground. [3]