

6B Breaking Down Angled Projections

1. A ball is thrown horizontally, with speed 20ms^{-1} , from the top of a building of height 30m.
Find:
 - a) The time the ball takes to reach the ground

b) Write the initial velocity in vector form

2. A particle is projected with velocity $\mathbf{U} = (3\mathbf{i} + 5\mathbf{j}) \text{ ms}^{-1}$, where \mathbf{i} and \mathbf{j} are the unit vectors in the horizontal and vertical directions respectively.

Find the initial speed of the particle and its angle of projection.