**6A Horizontal Projections**

1. A ball is thrown horizontally, with speed 20ms-1, from the top of a building of height 30m.

Find:

1. The time the ball takes to reach the ground
2. The horizontal distance travelled in that time
3. A particle is projected horizontally with a velocity of 15ms-1. Find:
4. The horizontal and vertical components of the displacement of the particle from the point of projection after 3 seconds
5. Find the distance of the particle from its starting point after 3 seconds
6. A particle is projected horizontally with a speed of $U ms^{-1}$ from a point 122.5m above a horizontal plane. The particle hits the plane at a point which is at a horizontal distance of 90m away from the starting point.

Find the initial speed of the particle.