

CW 1.6 Projectile Calculations

Name

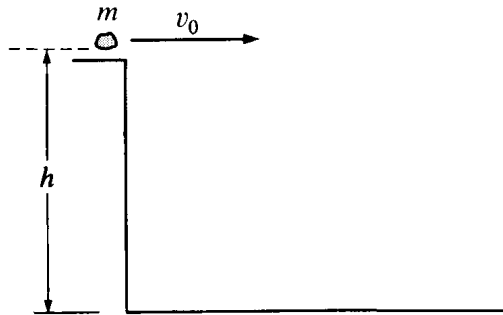
1. An aeroplane moving horizontally at 150 m/s releases a bomb at a height of 3500 m. The bomb falls to the ground and hits the intended target.

a) Draw a labelled diagram. (2)

b) How long does it take for the bomb to reach the ground? (2)

c) What was the horizontal distance of the plane from the target when the bomb was released? (2)

2. A rock of mass m is thrown horizontally off a building from a height h , as shown above. The speed of the rock as it leaves the thrower's hand at the edge of the building is v_0 .



Solve the following algebraically!

- What is the rock's initial vertical velocity? (1)
- How long does it take the rock to hit the ground? (2)
- How far does the rock travel in this time? (2)
- What would happen if the rock was thrown off a taller building? (1)