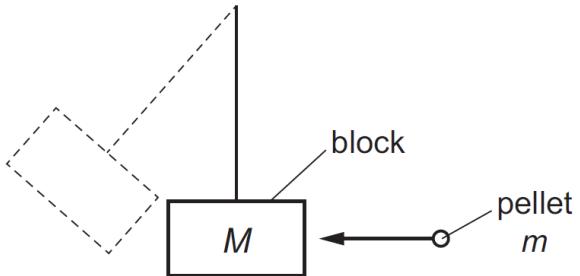


- 11 The diagram shows a ‘ballistic pendulum’.



A pellet of mass m travelling at a speed u hits a stationary block of mass M . The pellet becomes embedded in the block and causes the block to move immediately after the impact.

What is the maximum height gained by the block after impact?

- A $\frac{1}{2g}mu^2$
- B $\frac{1}{2g}(M+m)u^2$
- C $\frac{1}{2g}\left(\frac{m}{M+m}\right)u^2$
- D $\frac{1}{2g}\left(\frac{mu}{M+m}\right)^2$