

### Question

An athlete on a trampoline leaps straight up into the air with an initial speed of 6.54 m/s. Find the maximum height reached by the athlete (in meters) relative to the trampoline. Use  $g = 9.8 \text{ m/s}^2$  and answer to 3 SF.

### Solution

The Law of conservation of energy:

$$\frac{mv_0^2}{2} = mgh;$$

$$h = \frac{v_0^2}{2g} = \frac{6.54^2}{2 * 9.8} \text{ m} \approx \mathbf{2.18 \text{ m}}$$

**Answer:  $h \approx 2.18 \text{ m}$**

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