



a.) for $B = 1.2$ $N = \text{number of bounces}$
 $h_N = \text{max height after } N \text{ bounces}$

$$h_0 = 1 \quad h_1 = 1.2 \quad h_N = 1.2^N$$

$$1.2^N = 1000 \quad N = \frac{\ln 1000}{\ln 1.2}, \text{ rounded up}$$

b.) max height after N bounces is 1.2^N
~~speed~~ total energy is $m \cdot g \cdot 1.2^N$
 speed at 1000m =

Date

b.) max height after N bounces is 1.2^N

energy is $m \cdot g \cdot 1.2^N$

$$m \cdot g \cdot 1.2^N = m \cdot g \cdot 1000 + \frac{1}{2} m V^2$$

$$V \text{ at } 1000m = \sqrt{2 \cdot g \cdot (1.2^N - 1000)}$$