Since it reach the ground at t=2.0s, the height in t=0 is

$$h = \frac{1}{2}gt^2 = 19.6\text{m}$$

and the average sped is

$$19.6/2.0 = 9.8\,\text{m/s}.$$ +0.3

The kinetic energy at t=2.0s is

$$K = \frac{1}{2}mgh = \frac{5.0\,\text{kg} \cdot 9.8\,\text{m/s}^2 \cdot 19.6\,\text{m}}{2} = 429\,\text{J}.$$