Answer on question #57784, Physics

Question a pencil case has amass of 0.2 Kg and is dropped from a height of 0.45 m with what speed does the pencil case hit the ground

Solution Let us first find time of falling t:

$$s = gt^2/2$$

$$t = \sqrt{\frac{2s}{g}} = \sqrt{\frac{2 \cdot 0.45}{9.8}} \approx 0.3\, s$$

Then speed is

$$v = gt = 9.8 \cdot 0.3 \approx 2.97\, m/s$$