Answer on question #64337, Physics / Mechanics

Question   A man gets 100 k.cal of heat energy by eating a piece of bread His efficiency is 28 percent and mass is 60 kg . How high can he rise after eating the bread

Solution   Lets trasform calories into jouls:

$$E = 100kcal = 10^5 cal = 4.184 \cdot 10^5 \, J$$

Now lets find the height from energy conservation law:

$$0.28 \cdot E = mgh$$

$$h = \frac{0.28 \cdot E}{mg} = \frac{0.28 \cdot 4.184 \cdot 10^5}{60 \cdot 9.8} \approx 199.2 \, m$$

So, he can rise it on approximatelly 200 m.