Question #84960, Physics / Classical Mechanics

A car 5 kg drives at 10m/s. the car drives faster for 15s which provides 200j more of energy. if it takes 100j to overcome friction then what is the final speed of the car

Solution

$$W = K_f - K_i - W_{fr}$$

$$K = \frac{1}{2}mv^2$$

$$200 = \frac{1}{2}(5)v^2 - \frac{1}{2}(5)10^2 - 100$$

The final speed of the car

$$v = 14.8\frac{m}{s}.$$