

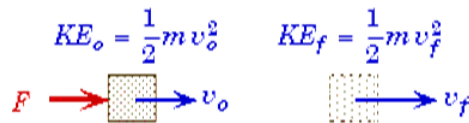
Answer on Question#39682, Physics, Other

Suppose a trolley of mass 5Kg is carrying a mass of 35 kg is pushed by a boy so that it start moving with 4m/s. It travelled 16m and stopped.

- A) What is the work done on the trolley?  
 B) What is the work done by the trolley?

**Solution:**

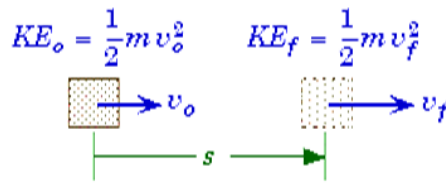
A) The energy associated with the work done by the net force does not disappear after the net force is removed (or becomes zero), it is transformed into the Kinetic Energy of the body. We call this the Work-Energy Theorem. In general, when work is done on a particular body, kinetic energy increases.



$$v_0 = 0, v_f = 4 \text{ m/s}$$

$$W = KE_f - KE_0 = \frac{m + M}{2} (v^2 - v_0^2) = \frac{5 + 35}{2} 4^2 = 320 \text{ J}$$

B) When work is done by a particular body, its energy decreases.



In this case  $v_0 = 4 \text{ m/s}, v_f = 0 \text{ m/s}$

$$W = KE_f - KE_0 = \frac{m + M}{2} (v^2 - v_0^2) = \frac{5 + 35}{2} (0 - 4^2) = -320 \text{ J}$$

**Answer.** A) 320 J

B) -320 J.