3 Work, kinetic energy, and potential energy – Part 1 — Answers

Answers

Work through these after you have tried the questions yourself.

2.1 $K = \frac{1}{2}mv^2 = \frac{1}{2} \times 0.50 \times 6.0^2 = 9.0$ J.
2.2 $W = Fd = 40 \times 5.0 = 200$ J.
2.3 (a) negative (friction opposes the motion). \ (b) zero (force is vertical, motion horizontal).
2.4 $U_g = mgh = 3.0 \times 9.8 \times 2.0 = 58.8$ J.
2.5 $W = \frac{1}{2}mv^2 \Rightarrow 36 = \frac{1}{2} \times 2.0 \times v^2 \Rightarrow v^2 = 36 \Rightarrow v = 6.0$ m/s.
2.6 $3^2 = 9$ times larger (kinetic energy depends on v^2).