

Physics 101-Rec
Quiz # 9

Instructor: Dr. Mekki

Name: _____

Key

Id#: _____

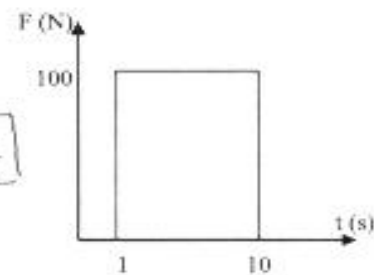
Sect.#: _____

An impulse force is applied to a particle of mass 2.0 kg as shown in the figure. At $t = 1.0$ sec, the particle has a velocity of 30 m/s.

- (a) What is the magnitude of the impulse?

$$|\vec{J}| = \text{Area under the curve}$$

$$= 9 \times 100 = \boxed{900 \text{ Kg}\cdot\frac{\text{m}}{\text{s}}}$$



- (b) What is the velocity of the particle at $t = 10$ sec?

$$|\vec{J}| = |\Delta \vec{p}| = m v_f - m v_i = 2 \times v_f - 2 \times 30 = 900$$

$$\Rightarrow \boxed{v_f = 480 \text{ m/s}}$$