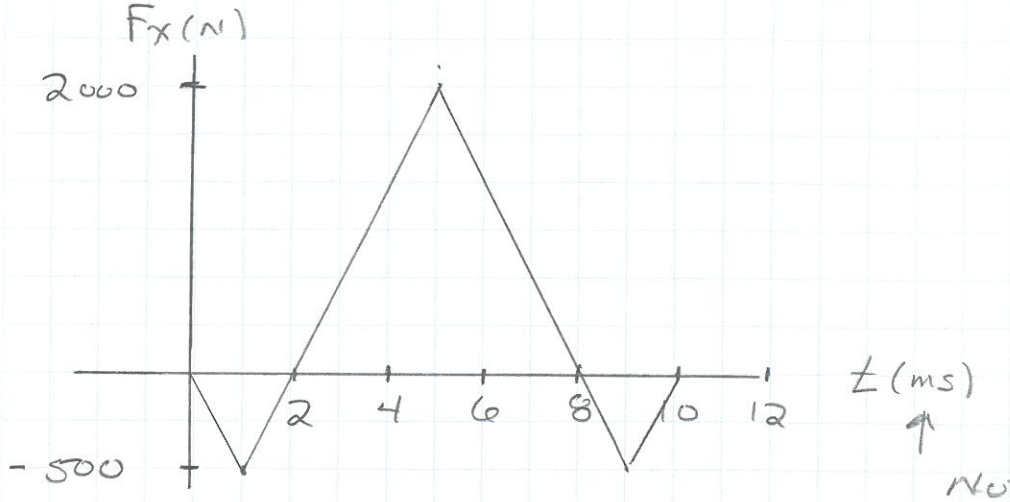

NOTE: units.

Impulse, $J_x = \int_0^{12} F_x(t)\,dt$

= area under F_x vs. t curve.

$$= -\frac{1}{2}(500)(0.002) + \frac{1}{2}(2000)(0.006) - \frac{1}{2}(500)(0.002)$$

$$= \underline{5.0 \text{ Ns}} \quad (\text{same as } \text{kg}\frac{\text{m}}{\text{s}})$$