

EQUATIONS FOR MIDTERM I

ELEMENTS OF PHYSICS

SPRING 2022

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These equations will be provided as a part of the exam package.

$$s_{\text{av}} = \frac{d}{t}, \quad a = \frac{\Delta v}{\Delta t}, \quad d = \frac{1}{2} g t^2, \quad g = 10 \frac{\text{m}}{\text{s}^2} = 10 \frac{\text{N}}{\text{kg}}$$

$$a = \frac{F_{\text{net}}}{m}, \quad W = m g, \quad p = m v, \quad \Delta p = F \Delta t$$

$$KE = \frac{1}{2} m v^2, \quad W = F d, \quad W = \Delta KE, \quad PE_g = m g h, \quad W = \Delta PE$$

$$P = \frac{\Delta E}{\Delta t}, \quad e = \frac{E_{\text{useful}}}{E_{\text{in}}} = \frac{P_{\text{useful}}}{P_{\text{in}}}$$

$$a_c = \frac{v^2}{R}, \quad F = G \frac{m M}{d^2}, \quad G = 6.7 \times 10^{-11} \frac{\text{Nm}^2}{\text{kg}^2}$$