

PHYSICS

Level 2

90254 Demonstrate understanding of waves

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i} \quad \text{or} \quad S_i S_o = f^2$$

$$m = \frac{d_i}{d_o} = \frac{h_i}{h_o} \quad \text{or} \quad m = \frac{f}{S_o} = \frac{S_i}{f}$$

$$n_1 \sin \theta_1 = n_2 \sin \theta_2 \quad \frac{n_1}{n_2} = \frac{v_2}{v_1} = \frac{\lambda_2}{\lambda_1}$$

$$v = f\lambda \quad T = \frac{1}{f} \quad v = \frac{d}{t}$$

90255 Demonstrate understanding of mechanics

$$v = \frac{\Delta d}{\Delta t}$$

$$a = \frac{\Delta v}{\Delta t}$$

$$v_f = v_i + at$$

$$d = v_i t + \frac{1}{2} at^2$$

$$d = \frac{v_i + v_f}{2} t$$

$$v_f^2 = v_i^2 + 2ad$$

$$a_c = \frac{v^2}{r}$$

$$F = ma$$

$$\tau = Fd$$

$$F = -kx$$

$$F_c = \frac{mv^2}{r}$$

$$p = mv$$

$$\Delta p = F \Delta t$$

$$E_p = \frac{1}{2} kx^2$$

$$E_k = \frac{1}{2} mv^2$$

$$\Delta E_p = mg \Delta h$$

$$W = Fd$$

$$P = \frac{W}{t}$$

acceleration due to gravity $g = 9.8 \text{ms}^{-2}$

90527 Demonstrate understanding of electricity and electromagnetism

$$E = \frac{V}{d} \quad F = Eq \quad \Delta E_p = Eqd \quad E_k = \frac{1}{2}mv^2$$

$$F = BIL \quad F = Bqv \quad V = BvL$$

$$I = \frac{q}{t} \quad V = \frac{\Delta E}{q} \quad V = IR \quad P = IV$$

$$P = \frac{\Delta E}{t}$$

$$R_T = R_1 + R_2 + \dots \quad \frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$