

PHYSICS formula



@amazingPhysics

Maklumat berikut mungkin berfaedah. Simbol-simbol mempunyai makna yang biasa.
The following information may be useful. The symbols have their usual meaning.

1. FORCE AND MOTION I

$$a = \frac{v-u}{t}$$

$$s = \frac{1}{2}(u+v)t$$

$$s = ut + \frac{1}{2}at^2$$

$$v^2 = u^2 + 2as$$

$$\text{Momentum} = mv$$

$$F = ma$$

$$F = \frac{mv-mu}{t}$$

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

$$Ep = mgh$$

2. GRAVITATION

$$F = \frac{Gm_1m_2}{r^2}$$

$$g = \frac{GM}{r^2}$$

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

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

$$v = \sqrt{\frac{GM}{r}}$$

$$v = \frac{2\pi r}{T}$$

$$U = -\frac{Gm_1m_2}{r}$$

$$v = \sqrt{\frac{2GM}{r}}$$

$$T^2 = \frac{4\pi^2 r^3}{GM}$$

$$\frac{T_1^2}{T_2^2} = \frac{r_1^3}{r_2^3}$$

$$g = 9.81 \text{ ms}^{-2} @ \text{ N kg}^{-1}$$

$$G = 6.67 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$$

3. HEAT

$$Q = mc\theta$$

$$Q = ml$$

$$Q = Pt$$

$$P_1V_1 = P_2V_2$$

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

4. WAVES

$$f = \frac{1}{T}$$

$$v = f\lambda$$

$$\lambda = \frac{ax}{D}$$

5. LIGHT & OPTICS

$$n = \frac{c}{v}$$

$$n = \frac{\sin i}{\sin r}$$

$$n = \frac{1}{\sin C}$$

$$n = \frac{h}{h}$$

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$$

$$\text{Linear magnification, } m = \frac{v}{u}$$

The **KEY** to **SUCCESS** is to start **BEFORE** you are **READY**

6. FORCE AND MOTION II

$$F = kx$$

$$E = \frac{1}{2} Fx$$

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

7. PRESSURE

$$P = \frac{F}{A}$$

$$P = h\rho g$$

$$\rho = \frac{m}{V}$$

$$\frac{F_1}{A_1} = \frac{F_2}{A_2}$$

$$A_1 h_1 = A_2 h_2$$

$$F_b = \rho V g$$

8. ELECTRICITY

$$E = \frac{F}{Q}$$

$$I = \frac{Q}{t}$$

$$V = \frac{E}{Q}$$

$$V = IR$$

$$R = \frac{\rho l}{A}$$

$$E = V + Ir$$

$$P = IV$$

$$P = \frac{V^2}{R}$$

$$P = I^2 R$$

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

$$E = \frac{F}{d}$$

9. ELECTROMAGNETISME

$$\frac{V_S}{V_P} = \frac{N_S}{N_P}$$

$$n = \frac{\text{Output power}}{\text{Input power}} \times 100\%$$

10. ELECTRONIC

$$E = eV$$

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

$$\beta = \frac{I_C}{I_B}$$

$$e = 1.66 \times 10^{-19} \text{ C}$$

11. PHYSICS NUCLEAR

$$N = \left(\frac{1}{2}\right)^n N_0$$

$$E = mc^2$$

$$c = 3.00 \times 10^8 \text{ m s}^{-1}$$

$$1 \text{ a.m.u.} = 1.66 \times 10^{-27} \text{ kg}$$

12. QUANTUM PHYSICS

$$E = hf$$

$$f = \frac{c}{\lambda}$$

$$\lambda = \frac{h}{p}$$

$$\lambda = \frac{h}{mv}$$

$$E = \frac{hc}{\lambda}$$

$$P = nhf$$

$$hf = W + \frac{1}{2} mv^2_{\text{maks}}$$

$$W = hf_0$$

$$h = 6.63 \times 10^{-34} \text{ J s}$$

$$e = 1.66 \times 10^{-19} \text{ C}$$

