

## DATA SHEET PHYSICS 131

### PHYSICAL CONSTANTS

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

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

$$g = 9.80 \text{ m s}^{-2}$$

$$\rho_{\text{water}} = 1.00 \times 10^3 \text{ kg m}^{-3}$$

$$\rho_{\text{mercury}} = 1.36 \times 10^4 \text{ kg m}^{-3}$$

$$R = 8.31 \text{ J mol}^{-1} \text{ K}^{-1}$$

$$k = 1.38 \times 10^{-23} \text{ J K}^{-1}$$

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### MECHANICS

$$v = u + at$$

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

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

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

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

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

$$P = h\rho g$$

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### PROPERTIES OF MATTER

$$Y = \frac{\sigma}{\varepsilon}$$

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

$$\varepsilon = \frac{\Delta l}{l}$$

$$\gamma = \frac{F}{l}$$

$$h = \frac{2\gamma \cos \theta}{r\rho g}$$

$$\Delta P = \frac{2\gamma}{r}$$

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### WAVES

$$V \propto \sqrt{T}$$

$$v = f\lambda$$

$$BF = f_1 - f_2$$

$$f' = \frac{V \pm v_o}{V \pm v_s} f$$

$$V = \sqrt{\frac{T}{\mu}}$$

$$f_n = \frac{nV}{2L} \text{ or } \frac{nV}{4L}$$

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