

## Formulae

These formulae are found within the topics of Unit 1. The formulae will be given in the examination questions if needed.

Kepler's third law

$$T^2 = R^3$$

where  $T$  is in years and  $R$  is in AU

Circumpolar stars

$$\text{declination} > 90 - \text{latitude}$$

Magnitude calculations

$$M = m + 5 - 5 \log d$$

where  $m$  is apparent magnitude,  $M$  is absolute magnitude and  $d$  is distance (parsecs).

Radial velocity of a galaxy

$$\frac{\lambda - \lambda_0}{\lambda_0} = \frac{v}{c}$$

where  $v$  is the radial velocity,  $c$  is the speed of light,  $\lambda$  is wavelength and  $\lambda_0$  is the rest wavelength.

Hubble's Law

$$v = Hd$$

where  $v$  is velocity,  $d$  is distance and  $H$  is the Hubble constant.