Geometry/Trigonometry:

$$\cos(30°)=\frac{1}{2}\sqrt{3} \quad \sin(30°)=\frac{1}{2} \quad \tan(30°)=\frac{1}{3}\sqrt{3}$$
$$\cos(45°)=\frac{1}{2}\sqrt{2} \quad \sin(45°)=\frac{1}{2}\sqrt{2} \quad \tan(45°)=1$$
$$\cos(60°)=\frac{1}{2} \quad \sin(60°)=\frac{1}{2}\sqrt{3} \quad \tan(60°)=\sqrt{3}$$

$$\cos\left(\frac{1}{2}\pi-\theta\right)=\sin(\theta) \qquad \sin\left(\frac{1}{2}\pi-\theta\right)=\cos(\theta)$$

$$\cos(2\theta)=1-2\sin^2(\theta) \qquad \sin(2\theta)=2\sin(\theta)\cos(\theta)$$

	circle	sphere
circumference	$2\pi r$	
(surface) area	πr^2	$4\pi r^2$
volume		$\frac{4}{3}\pi r^3$

Integrating and Differentiating:

$$\frac{d(x^n)}{dx}=nx^{n-1}$$
$$\int x^n dx=\frac{x^{n+1}}{n+1}$$

Linear Motion in One Dimension (general):

$$v=\frac{dx}{dt}$$
$$a=\frac{dv}{dt}=\frac{d^2x}{dt^2}$$

Linear Motion in One Dimension (special case):

$a(t) = a =$ constant

$v(t) = v_0 + at$

$x(t) = x_0 + v_0 t + \frac{1}{2} a t^2$

Linear Motion in Two/Three Dimensions:

$\vec{v} = \frac{d\vec{r}}{dt}$

$\vec{a} = \frac{d\vec{v}}{dt} = \frac{d^2\vec{r}}{dt^2}$

Circular Motion:

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

$a_{\tan} = \frac{dv}{dt}$

Force Laws:

$\sum_i \vec{F}_i = m\vec{a}$ Newton's Second Law of Motion

$\vec{F}_{12} = -\vec{F}_{21}$ Newton's Third Law of Motion

Friction:

$F_s \le \mu_s N$ Static Friction

$F_k = \mu_k N$ Kinetic Friction

$F_D = -bv$ Dragg Force

Newton's Gravitational Law:

$$\vec{F}_{12} = -G\frac{m_1 m_2}{r^2_{21}}\hat{r}_{21}$$

Kepler's Third Law (Law of Periods):

$$\left(\frac{T_1}{T_2}\right)^2 = \left(\frac{r_1}{r_2}\right)^3$$