Rules

Angle in a semicircle

$\measuredangle$ at centre = 2x $\measuredangle$ at circumference

$\measuredangle$ in same segment are equal

$\measuredangle$ in opp segment are supplementary

Intersecting chord theorem

Tangent-Secant Theorem

Alternate Segment Theorem

Trigonometry

	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
	30°	45°	60°	90°	180°	270°	360
Sin	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	0	-1	0
Cos	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	-1	0	1
Tan	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$		0		0

$\sin(A+B) = \sin A\cos B + \cos A\sin B$

$\sin(A-B) = \sin A\cos B - \cos A\sin B$

$\cos(A\pm B) = \cos A\cos B \mp \sin A\sin B$

$\tan(A\pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A\tan B}$

$\sin 2A = 2\sin A\cos A$

$\cos 2A = \cos^2 A - \sin^2 A = 1 - 2\sin^2 A = 2\cos^2 A - 1$

$\tan 2A = \frac{2\tan A}{1-\tan^2 A}$

R-Formula

$a\cos\theta \pm b\sin\theta = R\cos(\theta \mp \alpha)$

$a\sin\theta \pm b\cos\theta = R\sin(\theta \pm \alpha)$

$R = \sqrt{a^2+b^2} \quad \tan\alpha = \frac{b}{a}$

$\sin(90°-\theta) = \cos\theta$

$\cos(90°-\theta) = \sin\theta$

$\tan(90°-\theta) = \frac{1}{\tan\theta}$

$\cos(-\theta) = \cos\theta$

$\sin(-\theta) = -\sin\theta$

$\tan(-\theta) = -\tan\theta$

$\sec\theta = \frac{1}{\cos\theta}$

$\mathrm{cosec}\,\theta = \frac{1}{\sin\theta}$

$\cot\theta = \frac{1}{\tan\theta}$

$\sin^2\theta + \cos^2\theta = 1$

$1 + \cot^2\theta = \mathrm{cosec}^2\theta$

$1 + \tan^2\theta = \sec^2\theta$

$\frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$

$\frac{d}{dx} u^n = n u^{n-1} \frac{du}{dx}$

$\frac{d}{dx}(uv) = u\frac{dv}{dx} + v\frac{du}{dx}$

$\frac{d}{dx}\frac{u}{v} = \frac{v\frac{du}{dx} - u\frac{dv}{dx}}{v^2}$

y	$\frac{dy}{dx}$	y	$\int y$
$\sin x$	$\cos x$	ax^n	$\frac{ax^{n+1}}{n+1}$
$\cos x$	$-\sin x$		
$\tan x$	$\sec^2 x$	$(ax+b)^n$	$\frac{(ax+b)^{n+1}}{a(n+1)}$
$\sin(f(x))$	$f'(x)\sin(f(x))$		
$e^{f(x)}$	$f'(x)e^{f(x)}$	$e^{f(x)}$	$\frac{1}{f'(x)}e^{f(x)}$
$\ln f(x)$	$\frac{f'(x)}{f(x)}$		

$\sin P + \sin Q = 2\sin\frac{1}{2}(P+Q)\cos\frac{1}{2}(P-Q)$

$\sin P - \sin Q = 2\cos\frac{1}{2}(P+Q)\cos\frac{1}{2}(P-Q)$

$\cos P + \cos Q = 2\cos\frac{1}{2}(P+Q)\cos\frac{1}{2}(P-Q)$

$\cos P - \cos Q = -2\sin\frac{1}{2}(P+Q)\sin\frac{1}{2}(P-Q)$

Integrals

$\int_a^a f(x)\,dx = 0$

$\int_a^b f(x) = -\int_b^a f(x)$

$\int_a^b f(x) + \int_b^c f(x) = \int_a^c f(x)$

Kinematics

$\xrightarrow{\frac{d}{dx}}$

D V a

$\xleftarrow{\int}$