Information Sheet

$a^3+b^3 = (a+b)(a^2-ab+b^2)$

$a^3-b^3 = (a-b)(a^2+ab+b^2)$

$x = \dfrac{-b\pm\sqrt{b^2-4ac}}{2a}$

$m = \dfrac{y_2-y_1}{x_2-x_1}$

parallel lines: $m_1 = m_2$

perpendicular lines: $m_1 m_2 = -1$

vertex: $\left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)$

midpoint: $\left(\dfrac{x_1+x_2}{2}, \dfrac{y_1+y_2}{2}\right)$

$d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$(x-h)^2+(y-k)^2 = r^2$

$\log_a(x\cdot y) = \log_a(x)+\log_a(y)$

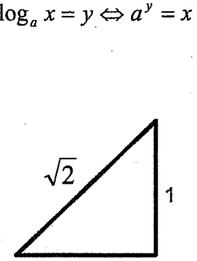
$\log_a\left(\dfrac{x}{y}\right) = \log_a(x)-\log_a(y)$

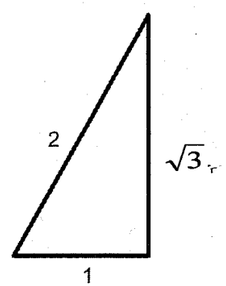
$\log_a(x^p) = p\log_a(x)$

$\log_a(1) = 0$ and $\log_a(a) = 1$

$\log_a(x) = \dfrac{\log_b(x)}{\log_b(a)}$

$\log_a x = y \Leftrightarrow a^y = x$





SOH CAH TOA

Syr Cxr Tyx $(r^2 = x^2+y^2)$

$\csc\theta = \dfrac{1}{\sin\theta}$

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

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

$\tan\theta = \dfrac{\sin\theta}{\cos\theta}$

$\cot\theta = \dfrac{\cos\theta}{\sin\theta}$

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

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

$1+\cot^2\theta = \csc^2\theta$

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

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

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

$\text{function}(\theta) = \text{cofunction}(90^\circ-\theta)$

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

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

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

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

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

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

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

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

If $y = \arcsin x$ then $-\frac{\pi}{2}\le y\le\frac{\pi}{2}$.

If $y = \arccos x$ then $0\le y\le\pi$.

If $y = \arctan x$ then $-\frac{\pi}{2}<y<\frac{\pi}{2}$.