

### Quadratic Equation

The order of the equation depends on the highest power of the variable.	eg. This is a second order algebraic equation: $ax^2+bx+c=0$
The constants with the variables are called coefficients.	here, a and b are coefficients of $x^2$ and x
The solution can be given by the quadratic formula:	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

### Binomial Theorem

For any positive integral index n:	$(x+a)^n = {}^nC_0x^n + {}^nC_1x^{n-1}a + \dots + {}^nC_na^n$
where a is a constant and	${}^nC_r = \frac{n!}{r!(n-r)!}$
the expansion of n! is	$n! = nx(n-1)x(n-2)\dots 3 \times 2 \times 1$

### Trigonometric Ratios

Angle x	$0^\circ=0$	$30^\circ= \pi/6$	$45^\circ= \pi/4$	$60^\circ= \pi/3$	$90^\circ= \pi/2$
sin x	0	1/2	$1/\sqrt{2}$	$\sqrt{3}/2$	1
cos x	1	$\sqrt{3}/2$	$1/\sqrt{2}$	1/2	0
tan x	0	$1/\sqrt{3}$	1	$\sqrt{3}$	$\infty$
1 radian=	$180/\pi$	$1^\circ=$	60' minutes of arc	1'=	60" seconds of arc



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