Directly Proportional	$y = kx$	$k = \frac{y}{x}$
Inversely Proportional	$y = \frac{k}{x}$	$k = yx$

k: Constant of Proportionality

$ax^2 + bx + c = 0$		
	Quadratic formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
	Concavity	Concave up: $a > 0$
		Concave down: $a < 0$
	Discriminant	$\Delta = b^2 - 4ac$
	Vertex of the parabola	$V\left(\frac{-b}{2a}, \frac{-\Delta}{4a}\right)$

$y = a(x - h)^2 + k$		
	Concavity	Concave up: $a > 0$
		Concave down: $a < 0$
	Vertex of the parabola	$V(h, k)$

Zero-product property	$A \times B = 0 \Leftrightarrow A = 0 \vee B = 0$	ex : $(x + 2) \times (x - 1) = 0 \Leftrightarrow$ $x + 2 = 0 \vee x - 1 = 0 \Leftrightarrow x = -2 \vee x = 1$
Difference of two squares	$(a - b)(a + b) = a^2 - b^2$	ex : $(x - 2)(x + 2) = x^2 - 2^2 = x^2 - 4$
Perfect square trinomial	$(a + b)^2 = a^2 + 2ab + b^2$	ex : $(2x + 3)^2 = (2x)^2 + 2 \cdot 2x \cdot 3 + 3^2 =$ $4x^2 + 12x + 9$
Binomial theorem	$(x + y)^n = \sum_{k=0}^{n} {}^nC_k \quad x^{n-k} \quad y^k$	