

Function families reference

Family	General form	Key features
Linear	$y = mx + b$	Slope m , y-intercept b
Quadratic	$y = ax^2 + bx + c$	Vertex at $x = -b/(2a)$; opens up if $a > 0$
Cubic	$y = ax^3 + \dots$	Up to 2 turning points, 3 zeros
Exponential	$y = a \cdot b^x$	Growth if $b > 1$, decay if $0 < b < 1$
Logarithmic	$y = \ln x$	Domain $x > 0$; passes $(1, 0)$
Rational	$y = 1/(x - h)$	Vertical asymptote $x = h$
Sine	$y = A \sin(Bx)$	Amplitude $ A $, period $2\pi/B$
Absolute value	$y = x - h + k$	Vertex (h, k)

Notes