PARENT FUNCTIONS
AND THEIR CHARACTERISTICS

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Function and Table of Values	Graph	Characteristics
Linear $f(x) = x$ 	x - intercepts: y - intercept: Domain: Range:

x	$f(x)$
-1	-1
0	0
1	1

Linear $f(x) = x$ — Characteristics: x - intercepts: y - intercept: Domain: Range:

Quadratic

$f(x) = x^2$

x	$f(x)$
-2	4
-1	1
0	0
1	1

x - intercepts:

y - intercept:

Vertex:

Domain:

Range:

Cubic

$f(x) = x^3$

x	$f(x)$
-2	-8
-1	-1
0	0
1	1

x - intercepts:

y - intercept:

Domain:

Range:

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Function and Table of Values	Graph	Characteristics
Rational $f(x) = \frac{1}{x}$ 		Vertical Asymptote: Horizontal Asymptote: x - intercepts: y - intercept: Domain: Range:
Square Root $f(x) = \sqrt{x}$ 		x - intercepts: y - intercept: Domain: Range:
Absolute Value $f(x) = |x|$ 		x - intercepts: y - intercept: Domain: Range:

Rational table of values:

x	$f(x)$
-2	$-\frac{1}{2}$
-1	-1
0	undefined
1	1

Square Root table of values:

x	$f(x)$
-1	undefined
0	0
1	1

Absolute Value table of values:

x	$f(x)$
-2	2
-1	1
0	0
1	1

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Function and Table of Values	Graph	Characteristics
Periodic (Trigonometric) $f(x) = sinx$ <table><tr><td>x^o</td><td>$f(x)$</td></tr><tr><td>0</td><td>0</td></tr><tr><td>30</td><td>$\frac{1}{2}$</td></tr><tr><td>60</td><td>$\frac{\sqrt{3}}{2}$</td></tr><tr><td>90</td><td>1</td></tr></table>		Period: x - intercepts: y - intercept: Domain: Range:
Exponential $f(x) = 2^x$ <table><tr><td>x</td><td>$f(x)$</td></tr><tr><td>-1</td><td>$\frac{1}{4}$</td></tr><tr><td>0</td><td>1</td></tr><tr><td>1</td><td>2</td></tr></table>		Asymptote: x - intercepts: y - intercept: Domain: Range:
Logarithmic $f(x) = logx$ <table><tr><td>x</td><td>$f(x)$</td></tr><tr><td>-1</td><td>undefined</td></tr><tr><td>0</td><td>undefined</td></tr><tr><td>1</td><td>0</td></tr></table>		Asymptote: x - intercepts: y - intercept: Domain: Range:

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ADDITIONAL NOTES