Families of Functions   Go to this website: bit.ly/fofTI
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Note: Each parent function has two videos that illustrate how to graph it. The one with 'P' explains **in detail** how to graph that function. The one with '**Q**' is a **quick review** of how to graph that parent function.

Code	Parent function	Description	Ctrl + Click on page number
		Videos that teach how to do the transformations	*Page 2*
00	$Ax + By = C$ $y - y_1 = m(x - x_1)$ $x = c$ $y = mx + b$ $y = c$ $m = \dfrac{\Delta y}{\Delta x} = \dfrac{y_2 - y_1}{x_2 - x_1}$	Linear relations What slope means and its formula	*Page 3* *Page 4*
01	$y = x^2$	Squaring function	*Page 5*
02	$y = |x|$	Absolute value	*Page 6*
03	$y = \sqrt{x}$	Square root	*Page 7*
04	$y = \dfrac{1}{x}$	Reciprocal	*Page 8*
05	$y = x^3$	Cubic	*Page 9*
06	$y = \sqrt[3]{x}$	Cube root	*Page 10*
07	$y = 2^x$	2 to the x	*Page 11*
08	$y = \left(\dfrac{1}{2}\right)^x$	One-half to the x	*Page 12*
09	$y = e^x$	e to the x	*Page 14*
10	$y = \ln(x)$	Natural log of x	*Page 15*
11	$y = \sqrt{r^2 - x^2}$	Semicircle	*Page 16*
12	$y = [x]$	Greatest integer, step	*Page 17*
13	$y = f(x)$	Generic piecewise	*Page 18*
14	$y = \sin(x)$	Sine	*Page 19*
15	$y = \cos(x)$	Cosine	*Page 21*

Videos that explain how to do the transformations in general

There are two links for each video: youtu.be, bit.ly:
(they are the same video with two different links)

Code	Expression	Description	Youtube link	Bitly link
V	$f(x) + a$	Vertical shifts	youtu.be/rl-00UfR4vc	bit.ly/TI21fofV
HS	$f(x - a)$	Horizontal shifts	youtu.be/v0tY_nnikRE	bit.ly/TI21fofHS
D	$a \cdot f(x)$	Dilations (vertical)	youtu.be/CVUO8yNdofQ	bit.ly/TI21fofD
K	$f(a \cdot x)$	Horizontal stretches/shrinks	youtu.be/MXSGUBEZzF0	bit.ly/TI21fofK
S	$-f(x)$	Opposite of the parent function	youtu.be/tnPN-epV3zs	bit.ly/TI21fofS
N	$f(-x)$	f at the opposite of x	youtu.be/ON9PNOrdmbs	bit.ly/TI21fofN