

Name Key

What Is a Parent Function??

It is the most basic form of a function of a "family" of Functions.

Quadratic Family: $f(x) = x^2$ is the parent function because it is the simplest form of a quadratic equation that still makes a parabola.

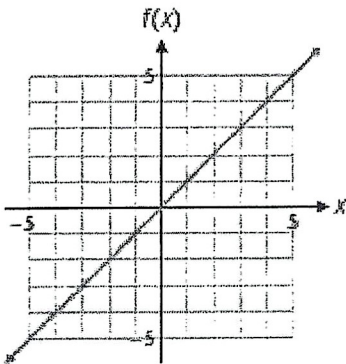
Cubic Family: $f(x) = x^3$ is the parent function because it is the simplest for a cubic equation that still makes the curvy shape of a cubic function.

Linear Family: $f(x) = x$ is the parent function because it is the simplest form of a linear equation that still makes a line.

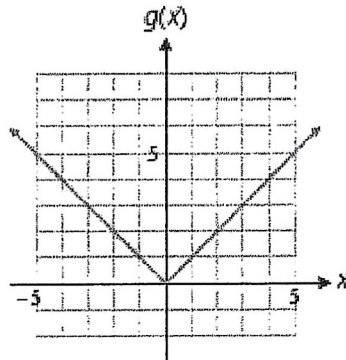
Absolute value Family: $f(x) = |x|$ is the parent function because it is the simplest form of an absolute value equation that still makes the V shape of an absolute value function.

Square Root Family: $F(x) = \sqrt{x}$ is the parent function because it is the simplest form of a square root function that still makes the curve shape of a square root function.

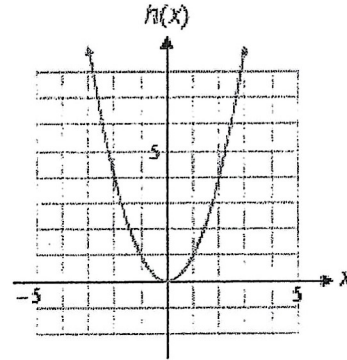
Cube Root Family: $f(x) = \sqrt[3]{x}$ is the parent function because it is the simplest form of a cube root function that still makes the curvy shape of a cube root function.



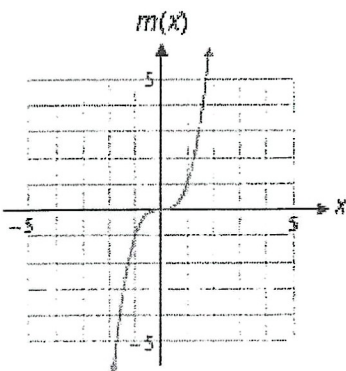
(a) Identity function
 $f(x) = x$
Domain: \mathbb{R}
Range: \mathbb{R}



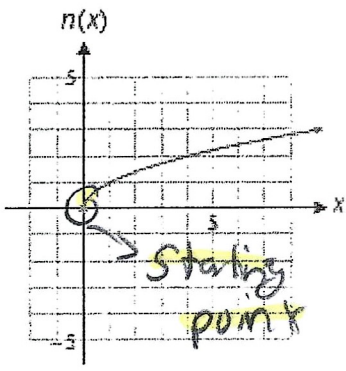
(b) Absolute value function
 $g(x) = |x|$
Domain: \mathbb{R}
Range: $[0, \infty)$



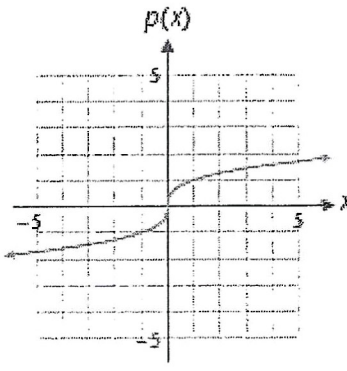
(c) Square function
 $h(x) = x^2$
Domain: \mathbb{R}
Range: $[0, \infty)$



(d) Cube function
 $m(x) = x^3$
Domain: \mathbb{R}
Range: \mathbb{R}



(e) Square root function
 $n(x) = \sqrt{x}$
Domain: $[0, \infty)$
Range: $[0, \infty)$



(f) Cube root function
 $p(x) = \sqrt[3]{x}$
Domain: \mathbb{R}
Range: \mathbb{R}

* All of these have the same T.P./Vertex of (0,0)

Figure 1 Some basic functions and their graphs.