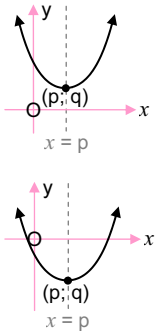
Summary of Domain and Range of Algebraic Functions

Parabola: $y = a(x - p)^2 + q$ & $y = ax^2 + bx + c$



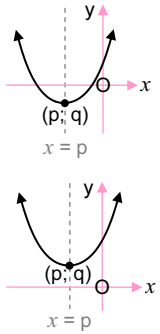
For a > 0

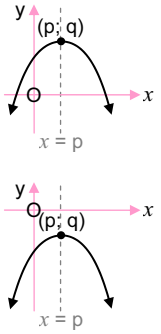
Domain:

$x \in \mathbb{R}$

Range:

$y \in \mathbb{R}$; $y \geq q$





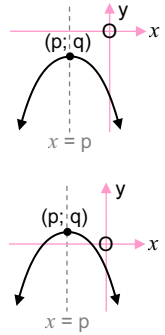
For a < 0

Domain:

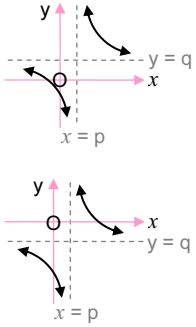
$x \in \mathbb{R}$

Range:

$y \in \mathbb{R}$; $y \leq q$



Hyperbola: $y = \frac{a}{x - p} + q$



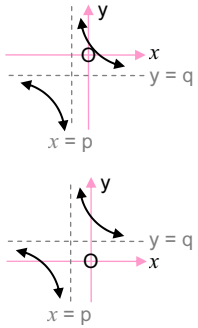
For a > 0

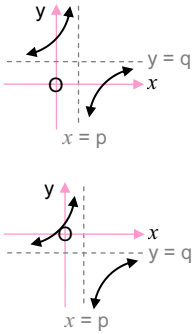
Domain:

$x \in \mathbb{R}; x \neq p$

Range:

$y \in \mathbb{R}; y \neq q$





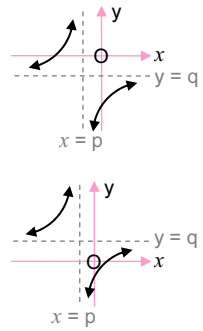
For a < 0

Domain:

$x \in \mathbb{R}; x \neq p$

Range:

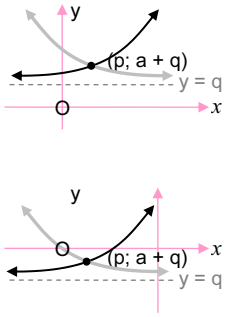
$y \in \mathbb{R}; y \neq q$



Exponential Graph: $y = ab^{x-p} + q$

b > 1: 

0 < b < 1: 



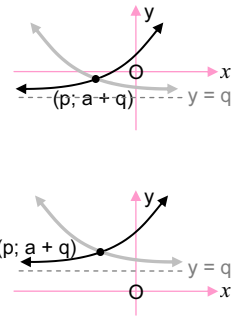
For a > 0

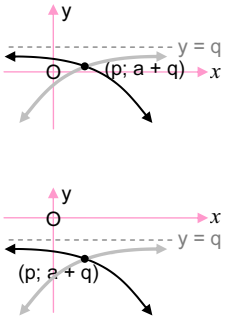
Domain:

$x \in \mathbb{R}$

Range:

$y \in \mathbb{R}$; $y > q$





For a < 0

Domain:

$x \in \mathbb{R}$

Range:

$y \in \mathbb{R}$; $y < q$