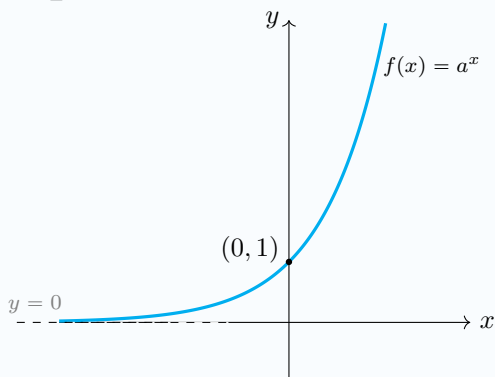


Graphs of Exponents and Logarithms

Exponential Functions with Base Greater than One

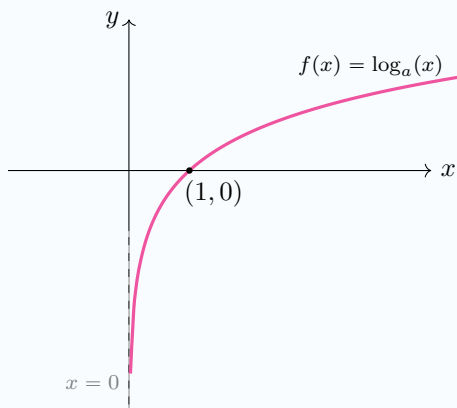


- $a^0 = 1$
- Horizontal asymptote at $y = 0$
- When x is a large negative number, y is a small positive number
- y is always strictly positive

Logarithmic Functions with Base Greater than One

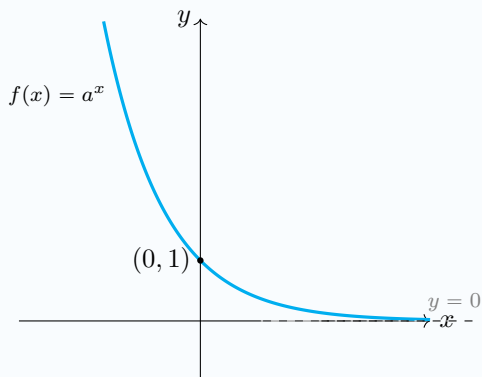
You mainly need to know the graph of \log_a when $a > 1$. The most common case of this is $\ln(x) = \log_e(x)$. e is just a number, approximately 2.7

$\log_a(x)$ is the inverse of a^x , so the roles of x and y are exchanged



- $\log_a(1) = 0$
- Vertical asymptote at $x = 0$
- When x is a small positive number, y is a large negative number
- x is always strictly positive

Exponential Functions with Base Smaller than One



- $a^0 = 1$
- Horizontal asymptote at $y = 0$
- When x is a large positive number, y is a small positive number
- y is always strictly positive