

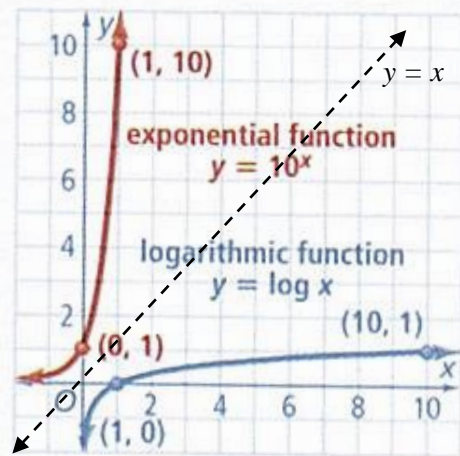
Intro to Logarithmic Functions

Recall the following about exponential functions:

- Domain: $(-\infty, \infty)$
- Range: $(0, \infty)$
- Horizontal Asymptote @ $y = 0$

A **logarithmic function** is the inverse of an exponential function. The graph shows $y = 10^x$ and its inverse $y = \log x$. Note that $(0, 1)$ and $(1, 10)$ are on the graph of $y = 10^x$, and that $(1, 0)$ and $(10, 1)$ are on the graph of $y = \log x$.

Recall that the graphs of inverse functions are reflections of each other across the line $y = x$. You can graph $y = \log_b x$ as the inverse of $y = b^x$.



We can clearly see from the graph that logarithmic functions have the following characteristics:

- Domain: $(0, \infty)$
- Range: $(-\infty, \infty)$
- Vertical Asymptote @ $x = 0$