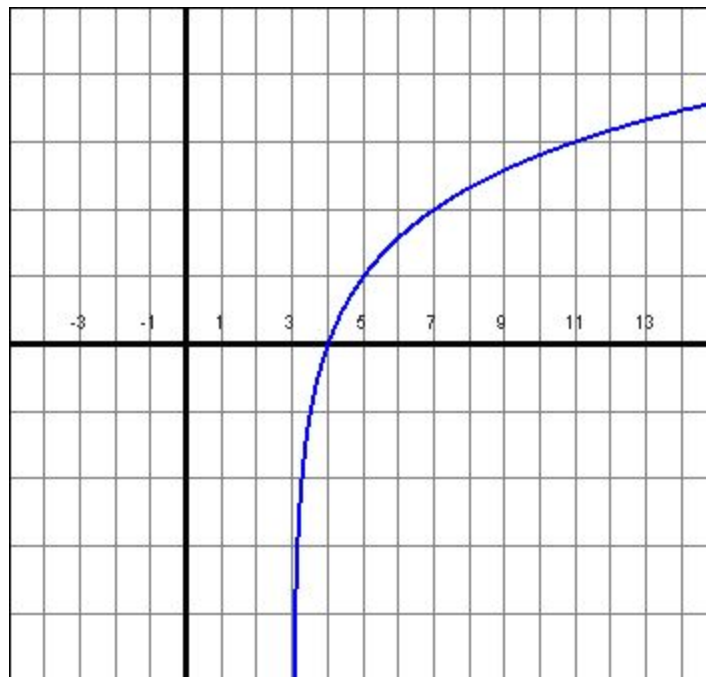


Unit 3: Exponential and Logarithmic Functions

Activity 2: Key Features of Logarithmic Functions

Formative Assignment

1. Fill in the key features of the function given in the graph.



Domain	
Range	
x-intercept	
y-intercept	
Interval(s) of Increase	
Interval(s) of Decrease	
Vertical Asymptote	
Horizontal Asymptote	

2. Fill in the key features for the function given below.

$f(x) = \log_{\frac{1}{3}} x$	
Domain	
Range	
x-intercept	
y-intercept	
Interval(s) of Increase	
Interval(s) of Decrease	
Vertical Asymptote	
Horizontal Asymptote	

3. Describe what the function $f(x) = \log_1 x$ looks like.
4. Use your answer from question three to determine where the functions $f(x) = \log_1 x$ and $g(x) = 1^x$ will intersect.
5. Determine the equation of each of the following functions given its key features.
- a) This function:
- Is increasing for $x > 0$.
 - Has no y-intercept.
 - Has a vertical asymptote of $x = 0$.
 - Has an x-intercept of (1,0).
 - Has a domain of $\{x \mid x > 0, x \in R\}$.
 - Has a range of $\{y \mid y \in R\}$.
 - Has a point (5,1) on its graph.
- b) This function:
- Is decreasing for $x \in R$.
 - Has a y-intercept of (0,1).
 - Has a horizontal asymptote of $y = 0$.
 - Has a domain of $\{x \mid x \in R\}$.
 - Has a range of $\{y \mid y > 0, y \in R\}$.

- Has a point $\left(1, \frac{1}{3}\right)$ on its graph.