

Logarithms Introduction

1. (a) Complete the tables below for the given exponential and logarithmic functions.

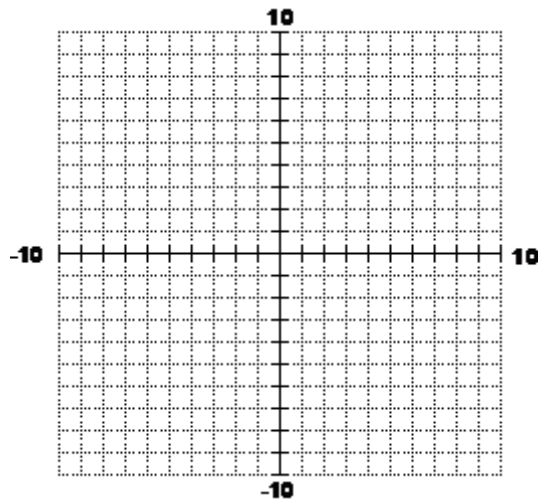
$$y = 2^x$$

x	y
-3	
-2	
-1	
0	
1	
2	
3	
5	

$$y = \log_2 x$$

x	y
	-3
	-2
	-1
	0
	1
	2
	3

- (b) Graph these two functions along with $y = x$ on the coordinate grid. Include any asymptote(s) and intercept(s).



- (c) What do you notice about the tables in part (a)? What do you notice about the graphs?

Conversions from one form to another

Use $\log_a x = y \quad \leftrightarrow \quad a^y = x$

2. Complete the chart, converting the given equation from one form to the other.

Logarithmic form	Exponential form
(a) $\log_3 81 = 4$	
(b) $\log 0.001 = -3$	
(c)	$7^5 = 16,807$
(d)	$e^{2.9957} \approx 20$
(e) $\log_5 1 = 0$	
(f)	$12^1 = 12$