

Graphing Exponential and Logarithmic Functions - Step-by-Step Lesson

Graph $f(x) = 6^{5-x}$

Since $5-x$ is zero when $x=5$, we will choose x values around 5 in our table of values. Also, let's graph 6^x on the same axes for comparison.

Explanation:

At first, it looks like 6^{5-x} should reflect across the y -axis since x is negative. However, the graph tells a different story. Rewriting $f(x)$, we get $6^{5-x} = 6^{-x+5} = 6^{-(x-5)}$. Therefore, $f(x)$ actually shifts horizontally to the right 5 units, and then reflects across the vertical line $x=5$.

x	6^{5-x}	(x, y)
5	$\frac{1}{16}$	(5, 0.0625)
6	$\frac{1}{64}$	(6, 0.0156)
7	$\frac{1}{39}$	(7, 0.0039)
8	$\frac{10000}{977}$	(8, 0.000977)
9	$\frac{61}{250000}$	(9, 0.000244)

