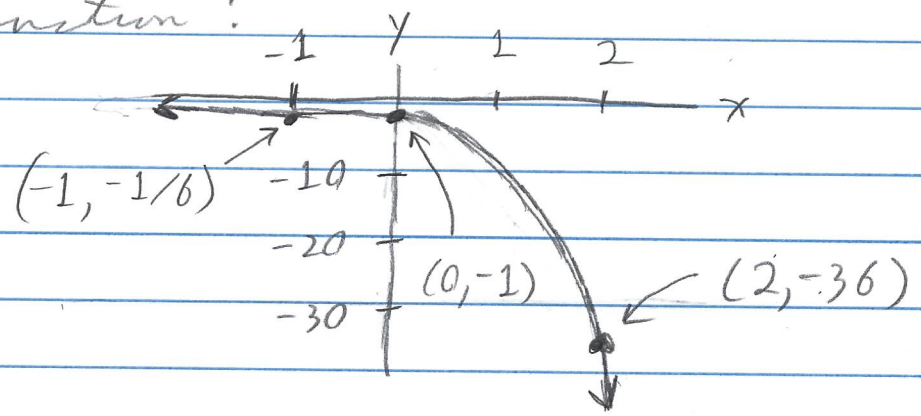
5,3,93

Exercise 5.3.93 Determine the exponential function:



Solution

We look for a function of the form $f(x) = Ca^x$. Since the graph contains the point $(0, -1)$ then we must have $f(0) = Ca^0 = (C)(1) = C = -1$, so that $C = -1$. Since the graph contains the point $(2, -36)$ then we must have $f(2) = Ca^2 = -a^2 = -36$. This implies $a^2 = 36$ or $a = \pm 6$. But the base of an exponential function must be positive and hence $a = 6$. So the exponential function is $\boxed{f(x) = Ca^x = -6^x}$.

□