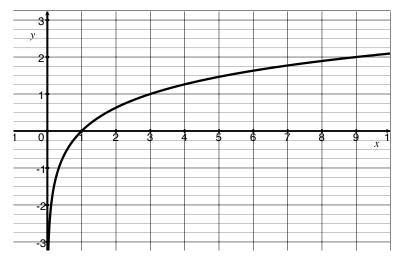
Quiz 3

Show all your work. Reasonable supporting work must be shown to earn credit. There are two sides to this quiz.

1. [3] (Exponent Activity pg2) Simplify: $\frac{-1}{9}^2x^2y^3(3x^3)^2$

- 2. (WebHW8 #30) It is known that the population (P measured in thousands) of a bug is modeled well by $P(t) = \frac{16}{3+ae^{kt}}$ where a and k are determined locally in geographic regions. In this region measurements have confirmed that P(0) = 2 and $P(1) = \frac{1}{2}$.
 - (a) [1] Are the population of bugs increasing or decreasing?
 - (b) [3] Find a and k so that you have a model of the bug's population for our local region.

- 3. The graph to the right is the graph of the form $f(x) = \log_b(x)$
 - (a) [1] (WebHW7 #20) What is the domain?



(b) [2] ($\S 3.2 \# 72$) Find b to write the explicit rule/expression for f.