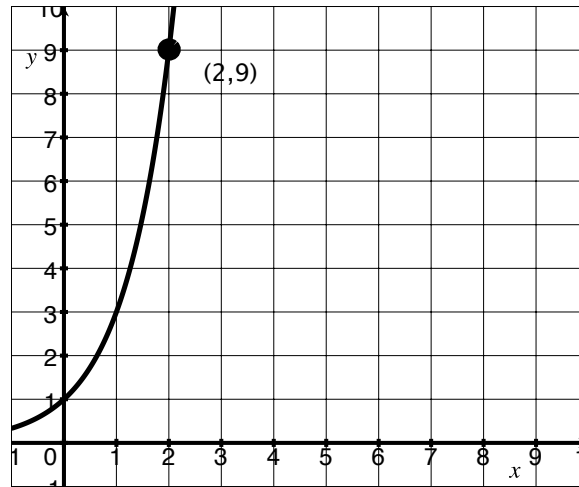# Quiz 4

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. [2] (§4.1 #15) Find the exponential function $f(x) = a^x$ whose graph is given above.

2. [3] (§4.2 #47) The function f has an inverse. Find f^{-1} and then graph f^{-1} on the axis above.

3. [2] (§4.4 #45) Solve the logarithmic equation for x

$$\log_5 x + \log_5(x - 1) = \log_5(4x)$$

4. [3] (§4.4 #69) Find the time required for an investment of \$5000 to grow to \$9000 at an interest rate of 8.2% per year, compounded quarterly.

(Interesting note: the S&P had an average annual return of 8.2% over the past 20 years according to Thomson Reuters.)