> In order to receive full credit, you must **show all your work** and simplify your answers.
> Do **not** use a calculator for this quiz.

1. Simplify and/or evaluate the following exponential and logarithmic expressions. Express in terms of fractions when they arise (i.e., do not use decimals):

   a.

   $$6^{-3} =$$

   b.

   $$18^{1/2} =$$

   c.

   $$\log_5 125 =$$

   d. (extra credit)

   $$\log_3(81\sqrt{3}) =$$

2. Solve the following exponential equation:

   $$4^{3x+1} = 64$$