Feb. 22, 2020 Online Activity: Quadratic Functions Name:

Instructions: Watch the video on Logarithms then complete the questions below. Upload a scanned copy to Blackboard for participation credit.

1. What is the definition of the logarithm with base a?

2. Rewrite the following logarithmic equations in exponential format or vice versa:

   (a) $\log_8 64 = 2$

   (b) $\log_{1/2} 8 = -3$

   (c) $\log_3 \frac{1}{9} = -2$

   (d) $5^2 = 25$

   (e) $2^{-4} = \frac{1}{16}$

   (f) $\frac{1}{3}^{-}4 = 81$

3. What is the domain of $f(x) = \log(4 - x)$?

4. Use properties of logs to solve compute the following:

   (a) $\log_6 36$

   (b) $\log_4 \frac{1}{16}$

   (c) $\log_7 1$

5. Solve the following logarithmic equations:

   (a) $\log_7 x = 2$

   (b) $\log_3(x^2 - 7x + 37) = 3$

6. What is the natural logarithmic function?

7. Use natural logarithms and your calculator to solve the following equations. Round your answer to the nearest hundredth

   (a) $e^x = 70$

   (b) $e^{-3x} = 400$

   (c) $10e^{2x} - 300 = -100.$