10350 Tutorial Week 02 - Set 01 Name _____

Section _____

1. Solve for x in following equations. Your answers should be simplified and have no log expressions.

1a. $16^{x+2} = 2^x$

1b. $27 \cdot 9^x = 3^{1-x}$

1c. $\log_3(x^2) - \log_3(x^2 - 2) = 1$

10350 Tutorial Week 02 - Set 02 Name _____

Section _____

2. A gardener has 100 ft of fencing wishes to construct a rectangular enclosure with one side along a 200 ft building and the other three sides using fencing material as show below. Assume that all the fencing material are used in the construction.

2a. Let x be the length of the side of the enclosure as shown. Find the area of the enclosure in terms of x.

2b. Find the dimensions (Length and Width) of the enclosure where the area enclosed is maximum. What is the maximum area.

10350 Tutorial Week 02 - Set 03 Name _____

Section _____

The Richter scale

$$\boxed{\text{Richter value } = \log_{10}\left(\frac{x}{A}\right),}$$

where A is the amplitude of the seismic wave of a reference earthquake and x is the amplitude of the seismic wave of the earthquake in question.

3. One of the worst earthquakes in history occured in Tokyo and registered 8.3 on the Richter scale. A more recent earthquake in California in 1989 registered 7.2. How much more severe was the earthquake in Tokyo in terms of the amplitude of its seismic wave?