

Reading Questions 4.1

Due Monday, Feb. 25 at the start of class

Name _____

1. On page 152 the section begins with recalling the graphical solution to $10^t = 2500$ from Section 3.2. In a similar way, solve $10^t = -100$ graphically and explain the result, if any. Sketch graphs to support your reasoning.

2-6. Complete the blanks after reading the blue box on page 152.

2. If x is a positive number, $\log x$ is the _____ of 10 that gives us x .

3. This means that $10^{\log x} = \underline{\hspace{2cm}}$.

4. For example, because $10^{2.24} \approx 173.78$, then $\log 173.78 \approx \underline{\hspace{2cm}}$ since the number _____ is the exponent we raise 10 to in order to get 173.78.

(Both can be checked with a graphing calculator.)

5. In Example 2c, we can write $10^{0.8} \approx 6.3096$ in exponential form:

$$\log(\underline{\hspace{2cm}}) \approx \underline{\hspace{2cm}}.$$

6. In Example 3f, the expression $\log(-100)$ is the number we raise 10 to in order to get -100 . By your answer to Question 1 on this handout, what is the result?

7. On page 154, Section 4.1 Example 5, the section recalls the graphical solution to the equation $100(2)^t = 3337,000,000$ from Section 3.3 Example 2 on page 125.. This solution corresponded to which date?

- Feb 14, 1998
- March 3, 1998
- August 21, 1998
- August 24, 1998

8. Just as you solved $100(2)^t = 3337,000,000$ graphically, so you can solve $2300(1.12)^t = 1,000,000$ which gives the age of my son when his account reaches 1 million dollars.

How old will he be? _____

9. On page 156 the text compares $\log 5x^2$ and $2 \log 5x$. Are these the same for all positive x ?

- Yes
- No

Use a calculator as you did on page 156 of your text to answer the following.

10. Find to 3 decimal places:

$$\frac{\log 7}{5}$$

11. Find to 3 decimal places:

$$\log \frac{7}{5}$$

12. Find to 3 decimal places:

$$\frac{\log 7}{\log 5}$$