

Reading Questions for Section 3.2

(8 pts)

Name _____

Due Date: _____

Bring this completed sheet with you to class on the due date to be handed in at the beginning of the period.

- (2) 1. The box on the first page of this section (and discussion preceding it) is important. Complete the blanks below, using any of the words in this list: **sum, difference, product, ratio**
 For linear functions, the _____ of consecutive y-values is constant.
 For exponential functions, the _____ of consecutive y-values is constant.

The data in **Table 3.7** given in the text is shown. Answer Questions 2-5 about these functions.

x	$f(x)$	x	$g(x)$
20	30	20	1000
25	45	25	1200
30	60	30	1440
35	75	35	1728

- (1) 2. One of these functions is linear and the other is exponential. Select which of the following are true. (Select **ALL** correct answers.)
- $f(x)$ is linear
 - $f(x)$ is exponential
 - $g(x)$ is linear
 - $g(x)$ is exponential
- (1) 3. True or False: The formula for $f(x)$ is not shown in the text, but it would be $f(x) = 3x - 30$.
 Hint: you can check this with a graphing calculator.
- (1) 4. True or False: The formula for g is $g(x) = 1000(1.2)^x$.
- (1) 5. In the text, when finding the formula for the exponential function, they solve $b^5 = 1.2$. How do they do this? (Select ONE)
- divide both sides by 5
 - multiply both sides by $1/5$
 - raise each side to the $1/5$ power
 - take 5th roots of both sides
- (1) 6. Pay careful attention to the topic titled **Similarities and Differences between Linear and Exponential Functions**, in particular, how the text finds the parameters m and b for a linear function $y = b + mx$ and the parameters a and b for an exponential function $y = ab^x$ when given two points through which they pass. The value of b in the linear function and the value of a in the exponential function give the *starting value*. What does the text mean by the **starting value**? Select **ALL** correct answers.
- the value of y when $x = 0$
 - the value of x when $y = 0$.
 - the x -intercept
 - the y -intercept
 - the y -intercept
- (1) 7. Read **Example 3** thoroughly, produce the graphs on your calculator in appropriate windows, and find the intersection points that they do. For **part (c)**, the text showed that the intersection point occurred when t was about 102 years (found using the intersection feature shown in class last week). What is this value of t , accurate to 4 decimal places? 102. ____ _