

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

1. The box on page 115 (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 on page 115 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

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
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.
4. True or False: The formula for g is $g(x) = 1000(1.2)^x$.
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
6. Pay careful attention to the middle of page 117, **Similarities and Differences between Linear and Exponential Functions**, and 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 first entry in the table
 - the x -intercept
 - the y -intercept
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. ____ _