**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Advanced Algebra – Assignment 1-6**

2-10 Simplify each expression below. Be sure to show your work. Assume the denominators in parts (b) and (c) are not equal to zero.

a. (x3)(x2) b.  c.  d. (x2)3

2-14 Write each expression below in a simpler form.

a.  b.  c.  d. 

2-81 Write an equation for each table.

a. b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| n | t(n) |  | n | t(n) |
| 0 | 1600 | 0 | 3906.25 |
| 1 | 2000 | 1 | 3125 |
| 2 | 2500 | 2 | 2500 |
| 3 | 3125 | 3 | 2000 |
| 4 | 3906.25 | 4 | 1600 |

c. d.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| n | t(n) |  | n | t(n) |
| 0 | 50 | 0 |  |
| 1 | 72 | 1 | 50 |
| 2 | 103.68 | 2 |  |
| 3 | 149.2992 | 3 | 72 |
|  |  | 4 |  |
|  |  |  | 5 | 103.68 |

e. How are the multipliers for (a) and (b) related, and why?

f. What strategies did you use to find the rule for part (d)?

g. In part (d) why is term 2 not 61?

2-98 Is it possible for the sequence t(n) = 5(2n) to have a term with a value of 200?

If so, which term is it? If not, justify why not.

2-99 Is it possible for the function f(x) = 5(2x) to have an output of 200?

If so, what input gives this output? If not, justify why not.

2-100 Consider the following sequences as you complete part (a) through (c) below.

Sequence 1 Sequence 2 Sequence 3

2, 6, . . . 24, 12, . . . 1, 5, . . .

1. Assuming that the sequences above are arithmetic with t(0) as the first term, find the next four terms for each sequence. For each sequence, write an explanation of what you did to get the next term and write a formula for t(n).
2. Would your terms be different if the sequences were geometric? Find the next four terms for each sequence if they are geometric. For each sequence, write an explanation of what you did to get the next term.
3. Create a totally different type of sequence for each pair of values shown above based on your own rule. Write your rule clearly (using words or algebra) so that someone else will be able to find the next three terms that you want.