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

**Advanced Algebra II – Assignment 1-8**

2-122 For each of the following expressions, find at least three equivalent expressions. Which do you consider the simplest?

a. (2x – 3)2 + 5 b. 

2-123 Match the expressions on the left with their equivalent expressions on the right. Assume that all variables represent positive values. Be sure to **justify** how you know each pair is equivalent.

a.  1. 2x 

b.  2. 

c.  3. 2xy2

d.  4. 2x 

e.  5. 4y 

2-124 Donnie and Dylan were both working on simplifying the expression below. The first step in each of their work is shown below.

Expression (

Donnie:  Dylan 

Each of them is convinced that he has started the problem correctly. Has either of them made an error? If so, explain the error completely. If not, explain how they both can be correct and verify that they will get the same, correct solution. Which student’s method do you prefer? Why?

2-125 While Jenna was solving the equation 150x + 300 = 600, she wondered if she could first change the equation to x + 2 = 4. What do you think?

1. Solve both equations and verify that they have the same solution.
2. What did Jenna do to the equation 150x+300=600 to change it to x+2 =4?
3. In the same way, rewrite 60t – 120 = 300.

2-126 Solve the system for m and b: 342 = 23m + b

147 = 10m + b

Consider the sequence: 3, 9, . . .

1. Assuming the sequence is arithmetic with t(1) as the first term, find the next four terms of the sequence and then write a rule for t(n).
2. Assuming that the sequence is geometric with t(1) as the first term, find the next four terms of the sequence and then write a rule for t(n).
3. Create a sequence that begins with 3 that is neither arithmetic nor geometric. For your sequence, write the next four terms and, if you can, write a rule for t(n).

* **2-127.** Tanika made this sequence of triangles:    
  
  1. If the pattern continues, what do you think the next two triangles in the sequence would be?
  2. Write a sentence to explain how to find the long leg and hypotenuse if you know the short leg (i.e., if the base is *n* units long).
* **2-128.** Consider the sequence 3, 9, …
  1. Assuming that the sequence is arithmetic with *t*(1) as the first term, find the next four terms of the sequence and then write a rule for *t*(*n*).
  2. Assuming that the sequence is geometric with *t*(1) as the first term, find the next four terms of the sequence and then write a rule for *t*(*n*).
  3. Create a sequence that begins with 3 that is neither arithmetic nor geometric. For your sequence, write the next four terms and, if you can, write a rule for *t*(*n*).