Additional Practice

1. Cut a sheet of paper into fourths. Stack the four pieces and cut the stack into fourths. Stack all the pieces and cut that stack into fourths again.

Step 1   Step 2   Step 3
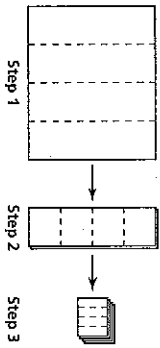
How many pieces of paper would you have at the end of

a. Step 1?　　b. Step 2?　　c. Step 3?

d. Step 10?　　e. Step n?

For Exercises 2–5, write the expression in standard form.

2. $2^1 \times 5^1$　　　3. $2^2 \times 5^2$

4. $2^3 \times 5^3$　　　5. $2^4 \times 5^4$

5A. What is the slope and y-intercept for the following:

D. $y = 5x + 7$

E. $y = .6x - 2$

F. $2x + 3y = 12$

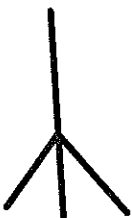5B. Simplify. Your answer should include only **positive** exponents.

E. $2x^2 \cdot 5x^4$

F. $3v^2w^5 \cdot 4v^3w^{-4}$

G. $(4y)^{-4}$

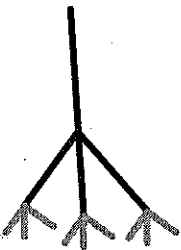H. $\dfrac{8c^3d^{-6}}{16c^3d^2}$

Additional Practice (continued)

6. Suppose you drew a pattern of branching lines starting with 3 lines:

Using a second color, you added 3 branches to the end of each of the first 3 lines:

Using a third color, you added 3 branches to the end of each of the 9 new lines.

a. Complete the table to show the number of branches you would draw in each new color.

Color	Branches
1	3
2	9
3	
4	
5	
6	

b. Write an equation showing the relationship between the number of branches drawn b and the number of the color c.

c. What is the number of the first color with which you will draw at least 1,000 branches?

d. Make a graph of the (color, branches) data from part (a).