

Problem Solving Problems #2

1. Find the missing terms in each pattern.

(a) 256 128 64 _____ 16 8

(b) 1 $\frac{1}{3}$ $\frac{1}{9}$ _____ $\frac{1}{81}$

(c) 7 9 12 16 _____

(d) 127,863 12,789 _____ 135 18

2. Look for a pattern in the first grid. Then use the pattern you observed to fill in the missing numbers of the second grid.

72	36	2
8	4	2
9	9	1

60	6	
		5
2		

3. Would you rather work for a month (30 days) and get paid \$1,000,000 or be paid 1 cent the first day, 2 cents the second day, 4 cents the third day, 8 cents the fourth day and so on? Why?

4. The integers greater than 1 are arranged as shown:

	2	3	4	5
9	8	7	6	
	10	11	12	13
17	16	15	14	
...

(a) In which column will 100 fall?

(b) In which column will 1000 fall?

(c) In which column will 1999 fall?

(d) In which column will 99,997 fall?

5. In a dart game, only 4 points or 9 points can be scored on each dart. What is the largest score that it is not possible to obtain? (Assume you have an unlimited number of darts.)