Name: _____

(This shows my own thinking.)

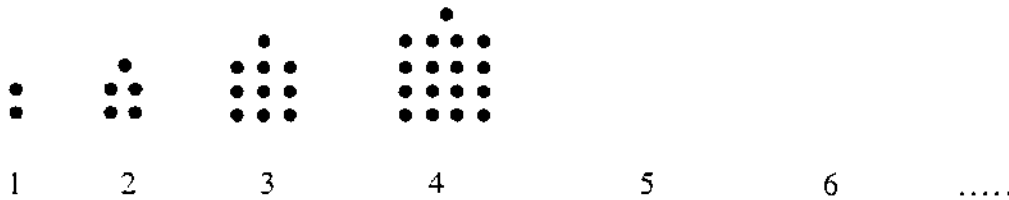★★ 1. Draw the fifth and sixth figures to follow the pattern of dots below.

    1   2   3   4   5   6   .....

★★★ 2. Answer these questions about the pattern in problem 1 above.
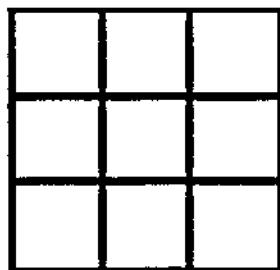
   a. How many dots would it take to make the 10th figure in the pattern? _____

   b. What is the number of the figure that is made with 401 dots? _____

   c. Let n stand for any figure number. Use n to tell how many dots there would be in the nth figure. _____

★★ 3. Margo's dog had a litter of 7 pups, all alike except for coloring. The mother and one pup weighed 15 pounds. The mother and two pups weighed 17 pounds. How much did the litter of 7 pups weigh by themselves?

                    Answer: _____ pounds

★★★★ 4. In a Magic Square, the sums of the columns, rows and diagonals are all the same. Using the digits 1-9 only once, fill in the blanks to make this figure a magic square with a sum of 15.

★ 5. Back in the old days, couples would enter marathon dance contests to win money. They would dance continuously, with only short breaks for food and drink. Some contests would go on for over a week. How many hours of dancing would there be in a 7-day week?

Answer: _____ hours

★★★ 6. Mr. Trumpet would like to offer you a job. He will hire you for ten days. He will pay you one of three ways:

a. $1.00 the first day, $2.00 the second day, $3.00 the third day and so on.

b. 10¢ the first day, 20¢ the second day, 40¢ the third day, and each day twice the amount of the day before.

c. $6.00 each day for all ten days.

Which way would pay you the most money?   Answer:_____

★ 7. How many gallon jugs would you need to hold 3 and $\frac{3}{4}$ gallons of lemonade?

Answer:_____jugs

★★★★ 8. Your Mom is a sporting person, so when it's close to your bedtime, she will have a contest with you to see if you get to stay up an extra half-hour to play a computer game. You get to draw a card from a well-shuffled deck. If you draw a face card, an ace, or any heart, she'll "have a heart" and let you stay up. If you draw any other card, you lose and go ahead to bed. Who has the best chance of winning, you or your Mom?

Answer: _____