SUNSHINE MATH - 8
Pluto, XX

Name: _____

(This shows my own thinking.)

★★★★ 1. Use four 4's, grouping symbols (if needed), and any of the four operations to make all numbers 6 through 9.

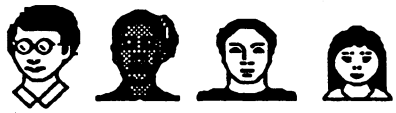
Answers : 6 = _____ 7 = _____

8 = _____ 9 = _____

★★★ 2. Carlos has the 'slow to go' hiccups. The good news is that they are going away. The bad news is that they are still there. When they started, he hiccuped after 1 minute had elapsed, then again after 2 minutes, again after 4 minutes, next after 8 minutes and so on. How many total hiccups did he hiccup in the month of April if they began 12 midnight, April 1st?

Answer : _____ hiccups

★★ 3. Julie, Drew, Alex, and LuAnn are great friends. They want their pictures taken in a group -- one row of four -- but they can't decide who should sit where. How many different arrangements do they have to choose from?



Answer: _____ arrangements

★★ 4. Jackie is a cross country runner. She is in a slump this spring and has won only 6 out of 20 races. How many races must she now win in a row to raise her record to 50%? to 75%?

Answer : _____races for 50%
_____races for 75%

★★ 5. There are 26 members on the baseball team. Of these, 11 can pitch, 6 can play first base, and 5 can do both. How many players can *neither* pitch nor play first base?

Answer: _____ players

★★★ 6. To determine how much of an adult medicine to give a child in an emergency, doctors sometimes use **Young's Rule:**

$$C = \frac{y}{y + 12} \times a$$

where C is the child dosage, y is the child's age in years, and a is the adult dose. Answer these questions about this formula:

a. An adult dosage of medicine X is 200 mg. How much should a 10-year old child take?

b. An adult dosage of medicine Y is 150 mg. How much should a 12-year old take?

c. Mr. Wynn had to reverse the formula above -- all he had at home was some Children's Bayer Asperin. His 5-year old daughter takes 3 such asperins for a headache -- how many should the 30-year old Mr. Wynn take, to have the same effect?

Answers: a. _____ b. _____ c. _____

★★★★ 7. $S = (32 - A) \div 2$ is used by doctors to say how many hours of sleep a person needs each day, up to age 18. A represents age, and S is the hours of sleep needed. Fill in the chart for the benchmark ages below, and graph the ordered pairs (A, S). Connect your points with a line so that you can predict the sleep needed without the formula. Circle the point on the graph that says how much sleep you should get each night.

A	S
2	
5	
10	
14	
17