

2005 Washington State Math Championship

Unless a particular problem directs otherwise, give an exact answer or one rounded to the nearest thousandth.

Potpourri - Grade 8

1. In the cryptarithm shown, where each letter stands for a distinct digit(0-9), what is the value of $M + O + N + E + Y$?

$$\begin{array}{r} SEND \\ +MORE \\ \hline MONEY \end{array}$$

2. Calculate the mean for an experiment if the scores for 50 trials were recorded as follows:

Score	Number of occurrences
1	5
2	12
3	10
4	16
5	6
6	1

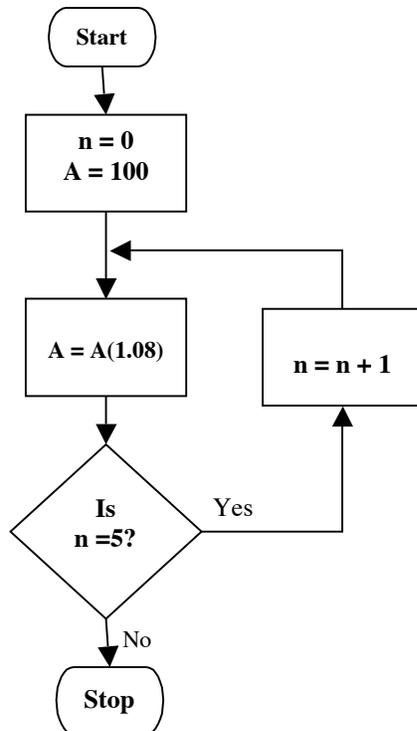
3. Express 456(base 7) as a base ten number
4. Fifteen consecutive integers add up to 1605. What is the smallest of these numbers?
5. A 50% solution of fruit juice is mixed with a 10% solution of fruit juice to get 100 gallons of 22% solution. How many gallons of the 10% solution is used?
6. A 6x6x6 cube is painted and then cut into 27 smaller cubes each 2x2x2. How many of the 2x2x2 cubes have paint on exactly one side?
7. Find the next number in the sequence: 1, 4, 9, 61, 52, 63, 94, ??????
8. Use the relationship where $\langle\langle x \rangle\rangle = x^2 + 2x + 1$, and the fact that $\langle\langle 9 \rangle\rangle = n$, find the value of n.

9. A video club rents out cameras, tapes, and recorders. The Secretary said that of all the members who rented items during the month,

- 1 rented cameras only,
- 2 rented tapes only,
- 4 rented recorders only,
- 5 rented at least two items including cameras and tapes,
- 3 rented at least two items including cameras and recorders,
- 8 rented at least two items including recorders and tapes, and
- 2 rented cameras, tapes and recorders.

How many members rented items during the month?

10. Consider the flow chart below.



Use it to complete this table of values for n and A

n	0	1	2	3	4	5
A	100					

What is the sum of the bottom row of numbers to the nearest tenth?