

APSMO MATHS OLYMPIAD DIVISION J

SAMPLE OLYMPIAD 1



Time Limit: 23 minutes

1. Time: 3 minutes

In the subtraction problem below, all five of the digits 3, 5, 6, 7 and 9 are to be placed, one in each box.

What is the smallest difference that can be the result?

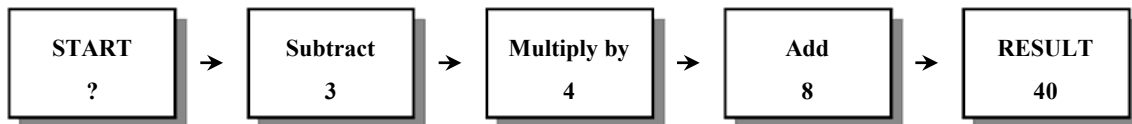
$$\begin{array}{r} \square \square \square \\ - \square \square \\ \hline \end{array}$$

2. Time: 5 minutes

Five brothers, each born in a different year, share a gift of \$100 according to the following arrangement: each boy, except the youngest, gets \$5 more than his next younger brother.

How much does the youngest boy get?

3. Time: 5 minutes



4. Time: 5 minutes

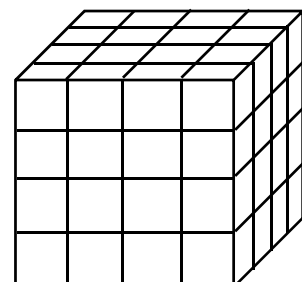
(1, 1, 9) is a triple of natural numbers whose sum is 11. We consider (1,1,9), (1,9,1) and (9,1,1) to be the same triple because each triple has the same three numbers.

How many other triples of natural numbers have a sum of 11?

5. Time: 5 minutes

Below is a $4 \times 4 \times 4$ cubic block of wood.

If all six faces of the cube are painted red and the cube is then cut into $1 \times 1 \times 1$ cubes along the lines shown, how many $1 \times 1 \times 1$ cubes will have red paint on just 2 faces?





ANSWERS

1. 259
2. \$10
3. 11
4. 9
5. 24