

# Mathematical Olympiads = November 16, 2010

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for Elementary and Middle Schools

### **1A** Time: 3 minutes

Suppose it is now 4:00 PM. What time will it be in 245 hours? Label your answer AM or PM.

## **1B** Time: 4 minutes

Ashley's locker number is a three-digit multiple of 5. The tens digit is the sum of the hundreds digit and the ones digit. The sum of all three digits is 16. No digit is repeated. What is Ashley's locker number?

# **1C** Time: 5 minutes

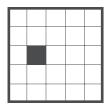
Ten friends have an average of 5 toy soldiers each. Lee joins them, and now the average is 6 toy soldiers each. How many toy soldiers does Lee have?

#### **1D** Time: 6 minutes

Tracy's Trophies charges by the letter for engraving. There is one fee for each vowel and a different fee for each consonant. CAROL costs \$31 to engrave. GABRIEL costs \$43 to engrave. How many dollars does BRIDGET cost to engrave?

#### **1E** Time: 6 minutes

As shown, the  $5 \times 5$  "checkerboard" contains one shaded square. In this diagram, how many squares of any size do not include the shaded square?





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## **2A** Time: 3 minutes

What number does N represent?

$$10 + 20 + 30 + 40 + 50 + N = 220$$

# **2B** Time: 4 minutes

What is the least multiple of 9 that is greater than 150?

## **2C** Time: 5 minutes

There are 2 red cars and 3 blue cars. The 5 cars contain a total of 12 people. No car has more than 4 people. Every car has at least 1 person. The only cars with the same number of people are the red cars. How many people are in **1 red car**?

#### **2D** Time: 5 minutes

What number does **G** represent in the following?

A baseball team won  $\frac{3}{4}$  of its first 24 games. Then the team lost its next **G** games. As a result, the team had now won-exactly half of its games.

## **2E** Time: 7 minutes

The first number on a list has two digits. The second number on the list is the first number plus the sum of its digits. The third number on the list, 44, equals the second number plus the sum of <u>its</u> (the second number's) digits. What is the first number?