



*Division*

**E**

*Mathematical Olympiads*

**January 16, 2018**

*for Elementary & Middle Schools*

*Contest*

**3**

*Directions to Students: After all questions have been read by your PICO, you will have 30 minutes to complete this contest. You may not have a pen or pencil in your hand while the PICO reads the set of questions to the class. Calculators are not permitted. All work is to be done on the pages provided. No additional scrap paper is to be used. Answers must be placed in the corresponding boxes in the answer column.*

Name: \_\_\_\_\_

**3A** Add:  $531 + 642 + 753 + 864 + 975$ .

**3B** The first 40 odd counting numbers are written. How many times does '3' appear as a digit?

**3C** Ashley has a rectangle made out of paper that is 8 cm by 12 cm. She folds it in half twice, first vertically and then horizontally. The new rectangle looks just like the original rectangle but smaller. What is the area of the new smaller rectangle in square cm?

Name: \_\_\_\_\_

Answer Column

**3A**

**3B**

**3C**

**cm<sup>2</sup>**

**3D**

**3E**

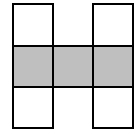
*Do Not Write in this Space.  
For PICO's Use Only.*

**SCORE:**

— Page may be folded along dotted line. —

— Page may be folded along dotted line. —

**3D** In the figure, the whole numbers from 1 through 7 are to be placed, one per square. The sum of the numbers in the left column, the sum of the numbers in the right column, and the sum of the numbers in each diagonal are the same. What is the least possible product of the numbers across the gray row?



**3E** In the following cryptarithm, each different letter represents a different digit in the 6-digit numbers. If  $B \neq 0$ , what is the least sum possible?

BETTER  
BITTER  
BATTER  
+BUTTER