AMC Practice

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Class Discussion

Should you check your work? http://blog.tanyakhovanova.com/?p=201

Competition Practice

For every problem below from 2000 AMC 10 answer the following questions:

- Is there a faster way to solve it?
- Is there a good way to check the answer?
- Which answers can be immediately excluded?

Exercise 1. In the year 2001, the United States will host the International Mathematical Olympiad. Let I, M, and O be distinct positive integers such that the product $I \cdot M \cdot O = 2001$. What is the largest possible value of the sum $I + M + O$?

(A) 23 (B) 55 (C) 99 (D) 111 (E) 671

Exercise 2. Each day, Jenny ate 20% of the jellybeans that were in her jar at the beginning of that day. At the end of the second day, 32 remained. How many jellybeans were in the jar originally?

(A) 40 (B) 50 (C) 55 (D) 60 (E) 75

Exercise 3. The Fibonacci sequence 1, 1, 2, 3, 5, 8, 13, 21, ... starts with two 1s, and each term afterwards is the sum of its two predecessors. Which one of the ten digits is the last to appear in the units position of a number in the Fibonacci sequence?

(A) 0 (B) 4 (C) 6 (D) 7 (E) 9

Exercise 4. Points M and N are the midpoints of sides PA and PB of $\triangle PAB$. As P moves along a line that is parallel to side AB, how many of the four quantities listed below change?

1. the length of the segment MN
2. the perimeter of $\triangle PAB$
3. the area of $\triangle PAB$
4. the area of trapezoid $ABNM$

(A) 0 (B) 1 (C) 2 (D) 3 (E) 4

Exercise 5. If $|x-2| = p$, where $x < 2$, then $x - p =$
(A) -2 (B) 2 (C) $2-2p$ (D) $2p-2$ (E) $|2p-2|$

Exercise 6. The sides of a triangle with positive area have lengths 4, 6, and x. The sides of a second triangle with positive area have lengths 4, 6, and y. What is the smallest positive number that is not a possible value of $|x-y|$?
(A) 2 (B) 4 (C) 6 (D) 8 (E) 10

Exercise 7. Two different prime numbers between 4 and 18 are chosen. When their sum is subtracted from their product, which of the following numbers could be obtained?
(A) 21 (B) 60 (C) 119 (D) 180 (E) 231

Exercise 8. Mrs. Walter gave an exam in a mathematics class of five students. She entered the scores in random order into a spreadsheet, which recalculated the class average after each score was entered. Mrs. Walter noticed that after each score was entered, the average was always an integer. The scores (listed in ascending order) were 71, 76, 80, 82, and 91. What was the last score Mrs. Walter entered?
(A) 71 (B) 76 (C) 80 (D) 82 (E) 91

Exercise 9. Two non-zero real numbers, a and b, satisfy $ab = a - b$. Find a possible value of $\frac{a}{b} + \frac{b}{a} - ab$.
(A) -2 (B) $-\frac{1}{2}$ (C) $\frac{1}{3}$ (D) $\frac{1}{2}$ (E) 2

Exercise 10. Boris has an incredible coin changing machine. When he puts in a quarter, it returns five nickels; when he puts in a nickel, it returns five pennies; and when he puts in a penny, it returns five quarters. Boris starts with just one penny. Which of the following amounts could Boris have after using the machine repeatedly?
(A) \$3.63 (B) \$5.13 (C) \$6.30 (D) \$7.45 (E) \$9.07