

2002 Sample Questions

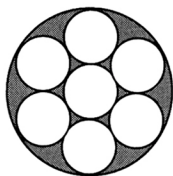
AMC 10

2. For the nonzero numbers a , b , and c , define

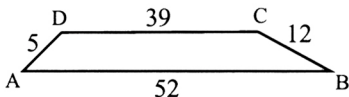
$$(a, b, c) = \frac{a}{b} + \frac{b}{c} + \frac{c}{a}.$$

Find $(2, 12, 9)$.

- (A) 4 (B) 5 (C) 6 (D) 7 (E) 8
5. Each of the small circles in the figure has radius one. The innermost circle is tangent to the six circles that surround it, and each of those circles is tangent to the large circle and to its small-circle neighbors. Find the area of the shaded region.



- (A) π (B) 1.5π (C) 2π (D) 3π (E) 3.5π
6. Cindy was asked by her teacher to subtract 3 from a certain number and then divide the result by 9. Instead, she subtracted 9 and then divided the result by 3, giving an answer of 43. What would her answer have been had she worked the problem correctly?
- (A) 15 (B) 34 (C) 43 (D) 51 (E) 138
9. Suppose A , B , and C are three numbers for which $1001C - 2002A = 4004$ and $1001B + 3003A = 5005$. The average of the three numbers A , B , and C is
- (A) 1 (B) 3 (C) 6 (D) 9 (E) not uniquely determined
25. In trapezoid $ABCD$ with bases \overline{AB} and \overline{CD} , we have $AB = 52$, $BC = 12$, $CD = 39$, and $DA = 5$. The area of $ABCD$ is
- (A) 182 (B) 195 (C) 210 (D) 234 (E) 260



Answers: 2.(C), 5.(C), 6.(A), 9.(B), 25.(C)