

SAMPLE QUESTIONS

2006 AMC 10

10A-#6. What non-zero real value for x satisfies $(7x)^{14} = (14x)^7$?

- (A) $\frac{1}{7}$ (B) $\frac{2}{7}$ (C) 1 (D) 7 (E) 14

10B-#11. What is the tens digit in the sum $7! + 8! + 9! + \dots + 2006!$?

- (A) 1 (B) 3 (C) 4 (D) 6 (E) 9

2006 AMC 10/12

10A-#22, 12A-#14. Two farmers agree that pigs are worth \$300 and that goats are worth \$210. When one farmer owes the other money, he pays the debt in pigs or goats, with “change” received in the form of goats or pigs as necessary. (For example, a \$390 debt could be paid with two pigs, with one goat received in change.) What is the amount of the smallest positive debt that can be resolved in this way?

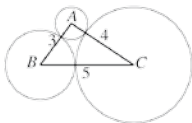
- (A) \$5 (B) \$10 (C) \$30 (D) \$90 (E) \$210

10B-#9, 12B-#6. Francesca uses 100 grams of lemon juice, 100 grams of sugar, and 400 grams of water to make lemonade. There are 25 calories in 100 grams of lemon juice and 386 calories in 100 grams of sugar. Water contains no calories. How many calories are in 200 grams of her lemonade?

- (A) 129 (B) 137 (C) 174 (D) 223 (E) 311

2006 AMC 12

12A-#13. The vertices of a 3-4-5 right triangle are the centers of three mutually externally tangent circles as shown. What is the sum of the areas of these circles?



- (A) 12π (B) $\frac{25\pi}{2}$ (C) 13π (D) $\frac{27\pi}{2}$ (E) 14π

12B-#10. In a triangle with integer side lengths, one side is three times as long as a second side, and the length of the third side is 15. What is the greatest possible perimeter of the triangle?

- (A) 43 (B) 44 (C) 45 (D) 46 (E) 47

Answers
10A-#6 (B), 10B-#11 (C)
10A-#22, 12A-#14 (C), 10B-#9, 12B-#6 (B)
12A-#13 (E), 12B-#10 (A)