AMC ⇒ 12 - 2/15/2000

Examples of the Easiest Problems:

3. 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

7. How many positive integers b have the property that $\log_b 729$ is a positive integer?
(A) 0 (B) 1 (C) 2 (D) 3 (E) 4

Examples of the Hardest Problems:

23. Professor Gamble buys a lottery ticket, which requires that he pick six different integers from 1 through 46, inclusive. He chooses his numbers so that the sum of the base-ten logarithms of his six numbers is an integer. It so happens that the integers on the winning ticket have the same property — the sum of the base-ten logarithms is an integer. What is the probability that Professor Gamble holds the winning ticket?
(A) 1/5 (B) 1/4 (C) 1/3 (D) 1/2 (E) 1

25. Eight congruent equilateral triangles, each of a different color, are used to construct a regular octahedron. How many distinguishable ways are there to construct the octahedron? (Two colored octahedrons are distinguishable if neither can be rotated to look just like the other.)
(A) 210 (B) 560 (C) 840 (D) 1260 (E) 1680