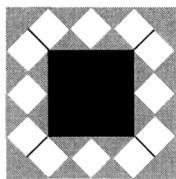


2002 Sample Questions

AMC 12

8. Betsy designed a flag using blue triangles (▀), small white squares (□), and a red center square (■), as shown. Let B be the total area of the blue triangles, W the total area of the white squares, and R the area of the red square. Which of the following is correct?



- (A) $B = W$ (B) $W = R$ (C) $B = R$ (D) $3B = 2R$ (E) $2R = W$
14. For all positive integers n , let $f(n) = \log_{2002} n^2$. Let
- $$N = f(11) + f(13) + f(14).$$
- Which of the following relations is true?
- (A) $N < 1$ (B) $N = 1$ (C) $1 < N < 2$ (D) $N = 2$ (E) $N > 2$
17. Several sets of prime numbers, such as $\{7, 83, 421, 659\}$, use each of the nine nonzero digits exactly once. What is the smallest possible sum such a set of primes could have?
- (A) 193 (B) 207 (C) 225 (D) 252 (E) 477
23. In triangle ABC , side \overline{AC} and the perpendicular bisector of \overline{BC} meet in point D , and \overline{BD} bisects $\angle ABC$. If $AD = 9$ and $DC = 7$, what is the area of triangle ABD ?
- (A) 14 (B) 21 (C) 28 (D) $14\sqrt{5}$ (E) $28\sqrt{5}$
24. Find the number of ordered pairs of real numbers (a, b) such that $(a+bi)^{2002} = a - bi$.
- (A) 1001 (B) 1002 (C) 2001 (D) 2002 (E) 2004