

Mathcounts / AMC 8 Beginner - HW 1

Name _____

- (1) _____ Find the smallest positive integer, N , such that the product of 135 and N is a perfect square.
- (2) _____ What common fraction (that is, a fraction reduced to its lowest terms) is equivalent to $.3\overline{25}$?
- (3) _____ How many positive integer values of x are there such that $\frac{36}{x+3}$ is an integer?
- (4) _____ What is the sum of the positive factors of 24?
- (5) _____ What is the square root of the difference between the square of 2.5 and the reciprocal of $\frac{4}{9}$?
- (6) _____ How many different ways can 36 identical chairs be placed in rows if all rows have the same number of chairs, each chair is in exactly one row, and no row has more than 20 chairs or less than 3 chairs?
- (7) _____ What is the smallest prime number greater than 120?
- (8) _____ Express as a fraction in lowest terms: $0.\overline{1} + 0.\overline{01}$
- (9) _____ Express one-half of 2^8 as a power of 2.
- (10) _____ What is the greatest common factor of 518 and 294?

- (11) _____ In the addition problem each letter represents a distinct digit. What is the numerical value of E?

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- (12) _____ What is the sum of the prime factors of 1001?
- (13) _____ Express $\overline{.28}$ as a common fraction.
- (14) _____ The number 13 is prime. If you reverse the digits you also obtain a prime number, 31. What is the larger of the pair of primes that satisfies this condition and has a sum of 110?
- (15) _____ Find the smallest positive integer divisible by 10, 11, and 12.
- (16) _____ Find the remainder when 1992^2 is divided by 9.
- (17) _____ Express the reciprocal of 0.0625 in decimal form.
- (18) _____ Kim's birthday was 200 days ago. Today is Wednesday. On what day of the week did his birthday fall?
- (19) _____ A school band found they could arrange themselves in rows of 6, 7, or 8 with no one left over. What is the minimum number of students in the band?
- (20) _____ Express $3.\overline{7}$ as a common fraction.