

Math Competition Questions 2

Math 180 Strategies of Problem Solving

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Question 1

Question

The longest professional tennis match lasted a total of 11 hours and 5 minutes. How many minutes was that?

Question 2

Question

Four students take an exam. Three of their scores are 70, 80, and 90. If the average of their four scores is 70, then what is the remaining score?

Question 3

Question

The number N is a two-digit number.

- When N is divided by 9, the remainder is 1.
- When N is divided by 10, the remainder is 3.

What is the remainder when N is divided by 11?

Question 4

Question

Which of the following numbers is not a perfect square?

- 2^{2017}
- 1^{2016}
- 3^{2018}
- 4^{2019}
- 5^{2020}

Question 5

Question

What is the sum of the distinct prime integer divisors of 2016?

Question 6

Question

Determine how many two-digit numbers satisfy the following property: when the number is added to the number obtained by reversing the digits, the sum is 132.

Question 7

Question

Two different numbers are randomly selected from the set $\{-2, -1, 0, 3, 4, 5\}$ are multiplied together. What is the probability that the product is 0?

Question 8

Question

What is the largest power of 2 that is a divisor of $13^4 - 11^4$?

Question 9

Question

An ATM password at Fred's Bank is composed of four digits from 0 to 9, with repeated digits allowable. If no password may begin with the sequence 9,1,1, then how many passwords are possible?

Question 10

Question

The sum of 25 consecutive even integers is 10,000. What is the largest of these 25 consecutive integers?