



2016 Math League International Tournament

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July, 2016

Relay Questions for Grades 3 & 4

Relay Round #1

- 1-1. What is the value of $(2 + 4 + 6 + \dots + 20) - (1 + 3 + 5 + \dots + 19)$?
- 1-2. Let $n = \text{TNYWR}$. What is the remainder of 3^n divided by 10?
- 1-3. Let $n = \text{TNYWR}$. If 1 apple, 2 bananas, and 3 cherries cost $\$n$ in total, 3 apples, 2 bananas, and 1 cherry cost $\$7$ in total, what is the total cost, in dollars, of 1 apple, 1 banana, and 1 cherry?
- 1-4. Let $n = \text{TNYWR}$. If the perimeter of a rectangle is $8n$, what is the maximum possible value for its area?
- 1-5. Let $n = \text{TNYWR}$. For how many of the integers from 100 to 999 inclusive is the product of its digits equal to $(n - 55)$?



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Relay Round #2

- 2-1. In a class of 40 students, 30 students get A's on the math test and 20 students get A's on the English tests. At least how many students get A's on both tests?
- 2-2. Let $n = \text{TNYWR}$. What is the sum of the two positive integers whose greatest common factor is $(n - 6)$ and whose least common multiple is $(n + 14)$?
- 2-3. Let $n = \text{TNYWR}$. John has $\$n$ more than Jill. If we combine their money we will get $\$42$. How much, in dollars, does John have?
- 2-4. Let $n = \text{TNYWR}$. What is the smallest positive integer x for which $(x + 8)$ is divisible by $(n - 26)$ and $(x + 17)$ is divisible by $(n - 24)$?
- 2-5. Let $n = \text{TNYWR}$. How many of the first $(n + 68)$ positive integers are divisible by 4 but not divisible by 5?