Hybleland L9-Lesson 13-14 Remainder-Assignment

Practice 1.

AMC10B 2016 / Problem 4

Zoey read 15 books, one at a time. The first book took her 1 day to read, the second book took her 2 days to read, the third book took her 3 days to read, and so on, with each book taking her 1 more day to read than the previous book. Zoey finished the first book on a monday, and the second on a Wednesday. On what day the week did she finish her 15th book?

A. Sunday B. Monday C. Wednesday D. Friday E. Saturday

Practice 2.

AMC10 2000 / Problem 25

In year N, the 300^{th} day of the year is a Tuesday. In year $N+1$, the 200^{th} day is also a Tuesday. On what day of the week did the 100^{th} of year $N-1$ occur?

A. Thursday B. Friday C. Saturday D. Sunday E. Monday

Practice 3.

AMC10B 2012 / Problem 4

When Ringo places his marbles into bags with 6 marbles per bag, he has 4 marbles left over. When Paul does the same with his marbles, he has 3 marbles left over. Ringo and Paul pool their marbles and place them into as many bags as possible, with 6 marbles per bag. How many marbles will be left over?

A. 1 B. 2 C. 3 D. 4 E. 5

Practice 4.

AMC10B 2010 / Problem 18

Positive integers a, b, and c are randomly and independently selected with replacement from the set $\{1, 2, 3, \ldots, 2010\}$. What is the probability that $abc + ab + a$ is divisible by 3?

A. $\frac{1}{3}$ B. $\frac{29}{81}$ C. $\frac{31}{81}$ D. $\frac{11}{27}$ E. $\frac{13}{27}$

Practice 5.

AMC10B 2009 / Problem 21

What is the remainder when $3^0 + 3^1 + 3^2 + \ldots + 3^{2009}$ is divided by 8?

A. 0 B. 1 C. 2 D. 4 E. 6

Practice 6.

AMC10B 2006 / Problem 11

What is the tens digit in the sum $7! + 8! + 9! + \cdots + 2006!$?

A. 1 B. 3 C. 4 D. 6 E. 9

Practice 7.

AMC10A 2003 / Problem 16

What is the units digit of 13^{2003}?

A. 1 B. 3 C. 7 D. 8 E. 9

Practice 8.

AMC10B 2016 / Problem 8

What is the tens digit of $2015^{2016} - 2017$?

A. 0 B. 1 C. 3 D. 5 E. 8

Practice 9.

AMC10A 2008 / Problem 24

Let $k = 2008^2 + 2^{2008}$. What is the units digit of $k^2 + 2^k$?

A. 0 B. 2 C. 4 D. 6 E. 8

Practice 10.

The two consecutive natural numbers are multiples of 19 and 13 respectively. Then what is the least possible value of the two natural numbers?

Practice 11.

If a natural number divided by 2 remains 1, divided by 3 remains 2, divided by 4 remains 1, and divided by 5 remains 1, then what is this number at least?