

The Ninth Grade Math Competition Class
Divisibility Rules
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1. What is the least number greater than 9000 that is divisible by 11?

2. Find A such that $3A6$ is a multiple of 9.

3. Find the ordered pairs of digits (A, B) such that $67A7B$ is a multiple of 225.

4. Find the value of the digit D if $47D4$ leaves a remainder of 2 when divided by 33.

5. A four-digit number uses each of the digits 1, 2, 3 and 4 exactly once. Find the probability that the number is a multiple of 4.

6. Find the ordered pair of digits (M, N) such that $52MN5$ is a multiple of 1125.

7. For all integer values of $n \geq 2$, k will divide $n^3 - n$. What is the greatest possible integer value of k ?

8. The integer n is the smallest positive multiple of 15 such that every digit of n is either 0 or 8. Compute $\frac{n}{15}$.