

## Mathletes Problem of the Week #11

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### What's the 4-1-1?



The product of the digits in the number 411, is  $4 \times 1 \times 1 = 4$ . Let's explore the digit products of three-digit numbers.

- There are other three-digit numbers with a digit product of 4. For example, 114 and 212. How many three-digit numbers have a digit product that is equal to 4? Try to list all of them.
- How many three-digit numbers have a digit product of 8? Try to list all of them.
- How many three-digit numbers have a digit product of 12? Try to list all of them.

So far, we have explored three possible digit products (4, 8, and 12). Try to find all the three-digit numbers that have the digit product of 1, then 2, then 3..., up to 25.

- Which digit products are impossible? Why are they impossible?
- Which digit product can be made the most number of ways?

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**Solutions & Explanations:** (Try one or try them all! Record your solutions and explanations above and on the back. Attach more paper if you need to.)

Name \_\_\_\_\_ Class \_\_\_\_\_

**(First and last name, please!)**

**Solutions due: February 27<sup>th</sup>**