

## Mathletes Problem of the Week #9

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### Featuring Factorials!



Have you ever seen a number written with an exclamation point? This is called a factorial and it tells you to multiply all the numbers from one up to that number together. For example, the number  $4!$  is the number produced when all the numbers from 1 to 4 are multiplied together:  $4! = 1 \times 2 \times 3 \times 4$ , which equals 24.

- a) What is  $10!$  ?
- b) How many times larger is  $10!$  than  $5!$  ?
- c) When the number  $50!$  is calculated and written out in full, how many zeroes are on the end?

**Solutions & Explanations:** (Solve one or solve them all. Attach more paper if you need to!)

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

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

**Solutions due: January 25<sup>th</sup>**