Introduction to Programming with Java

Task: PIExpansion

Score: ★★★☆☆

Prerequisites: ACM Task Force Commands

Description:

This problem asks for the implementation of Nilakantha Somayaj formula in order to calculate an approximate value of PI.

You will be asked for the number of terms (we have already coded that for you) to be included in the expansion and calculate the approximate PI value while you are printing the value after each iteration.

Here is the formula:

$$\pi = 3 + \frac{4}{2\times3\times4} - \frac{4}{4\times5\times6} + \frac{4}{6\times7\times8} - \frac{4}{8\times9\times10} + \cdots$$

Notice that:

- Term is alternating in sign.
- Denominator of terms always starting with the next even number (2,4,6,8,...)