

The Monthly Problem Solving Competition—October 2013

Problem A: find the remainder

Let $p(x) = x^{2011} + x^{1783} - 3x^{1707} + 2x^{341} + 3x^2 - 2$. Find the remainder, without using a calculator, when you divide $p(x)$ by $x^3 - x$. Show your work.

Problem B: how many factors

How many positive factors of 360,000 are perfect squares? Show your work.

NOTE

The winner will get a certificate and will have chance to go to MathFest in Portland, Oregon in August of 2014.

Please submit your solution to Dr. Huiya Yan by the end of October.

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