

Ask Math Anything

Study at Home with Po-Shen Loh

8 July 2020

Abstract

Professor Po-Shen Loh solves problems on his YouTube channel. A selection for practice.
Reference: [Ask Math Anything - Daily Challenge with Po-Shen Loh](#)

A Messy Factorization

Find $3m^2n^2$ if $m^2 + 3m^2n^2 = 30n^2 + 517$.

A Cubic Equation

How many roots does this cubic equation have? Are the roots real or imaginary?

$$3x^3 - 14x^2 + 7x - 4 = 0$$

An Equation Involving an Exponential

Solve for (x, y) :

$$\begin{aligned} 3^{x^2-2xy} &= 1 \\ x^2 &= y + 3 \end{aligned}$$

A Perfect Square

Find a 5-digit perfect square where some rearrangement of digits is also a perfect square.