



AUSTRALIAN MATHS TRUST

Maths Challenge
Intermediate: Years 9–10
Practice Problem

I2: Squared Fractions

The fraction $\frac{1}{20}$ can be written as the sum of the reciprocals of two squares:

$$\frac{1}{20} = \frac{1}{5^2} + \frac{1}{10^2}$$

I2: Questions

- Show that $\frac{1}{72}$ cannot be written as the sum of the reciprocals of the squares of two different positive integers.
- Write $\frac{1}{72}$ as the sum of the reciprocals of the squares of three different positive integers.
- Write $\frac{1}{8}$ as the sum of the reciprocals of the squares of different positive integers, using as few terms as possible.