In an infinite squares pattern with a side length of x,

$$Area = x^2 - \left(\frac{x}{2}\sqrt{2}\right)^2 + \left(\frac{x}{2}\right)^2 - \left(\frac{x}{4}\sqrt{2}\right)^2 + \left(\frac{x}{4}\right)^2 - \left(\frac{x}{8}\sqrt{2}\right)^2 + \left(\frac{x}{8}\right)^2 - \cdots$$

$$Area = x^2 + \left(\frac{x}{2}\right)^2 + \left(\frac{x}{4}\right)^2 + \left(\frac{x}{8}\right)^2 + \cdots - \left(\frac{x}{2}\sqrt{2}\right)^2 - \left(\frac{x}{4}\sqrt{2}\right)^2 - \left(\frac{x}{8}\sqrt{2}\right)^2 - \cdots$$

$$Area = x^2\left(1 + \frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \cdots\right) - \left(\frac{x}{2}\sqrt{2}\right)^2\left(1 + \frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \cdots\right)$$

$$Area = x^2\left(\frac{1}{1 - \frac{1}{4}}\right) - \left(\frac{x}{2}\sqrt{2}\right)^2\left(\frac{1}{1 - \frac{1}{4}}\right)$$

$$Area = x^2\left(\frac{4}{3}\right) - \left(\frac{x}{2}\sqrt{2}\right)^2\left(\frac{4}{3}\right)$$

$$Area = \frac{4}{3}\left(x^2 - \left(\frac{x}{2}\sqrt{2}\right)^2\right)$$

$$Area = \frac{4}{3}\left(x^2 - \frac{x^2}{2}\right)$$

$$Area = \frac{4}{3}\left(\frac{1}{2}x^2\right)$$

$$Area = \frac{2}{3}x^2$$

In this figure,

$$\frac{2}{3}a^2 + \frac{2}{3}b^2 = \frac{2}{3}c^2$$

$$a^2 + b^2 = c^2$$