

Fifth Problem of the Week, due Thursday 03/14 11:59pm

March 14, or 3/14, is Pi Day because the first few digits of the number pi are 3.14! While the day celebrates the mathematical type of pi, it is a little more fun to celebrate the delicious pie that you can eat. So, don't forget to eat one pie when trying out the problem of the week.

The following is an interesting fact about π :

$$1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \cdots = \frac{\pi^2}{6}$$

Use the previous fact to find

$$1 + \frac{1}{3^2} + \frac{1}{5^2} + \frac{1}{7^2} + \cdots = ?$$

Hint: You may perform arithmetic to the series and rearrange terms as you like without any issues.