SOLUTION: 1-(1/4)+(1/9)-(1/16)+(1/25)-....=?

<u>Algebra</u> -> <u>Sequences-and-series</u> -> <u>SOLUTION</u>: 1-(1/4)+(1/9)-(1/16)+(1/25)-....=? <u>Log On</u>

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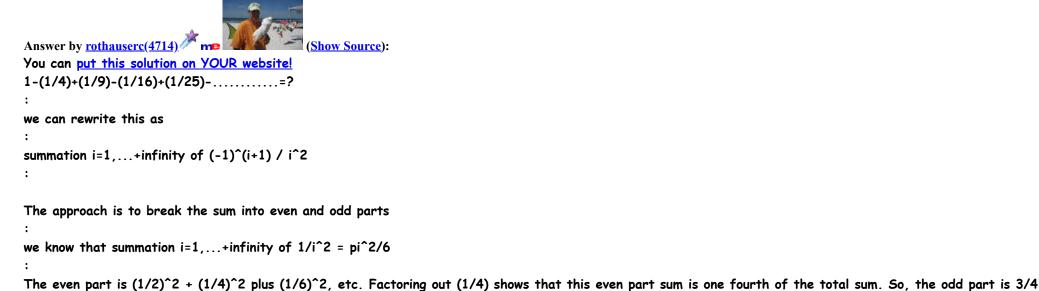
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Found 2 solutions by <u>rothauserc</u>, <u>ikleyn</u>:





of the sum. 3/4 - 1/4 is a half, so the series converges to pi^2 / 12 \cdot

Answer by ikleyn(31796) (Show Source

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1-(1/4)+(1/9)-(1/16)+(1/25)- . . . = ?



Well known fact (after Euler) is

S = 1 + (1/4) + (1/9) + (1/16) + (1/25) + (1/3
6) + . . . =
$$\pi^2$$
 (1)

The sum of the even terms is

$$E = (1/4) + (1/16) + (1/3)$$
6) + . . . =

$$(1/9) + \dots) = \left(\frac{1}{4}\right) \cdot \left(\frac{\pi^2}{\epsilon}\right)$$
 (2)

What the problem actually asks about is the difference S - 2E = $\frac{\pi^2}{6}$ - $\left(\frac{2}{4}\right) \cdot \left(\frac{\pi^2}{6}\right) = \left(\frac{1}{2}\right) \cdot \left(\frac{\pi^2}{6}\right) = \left(\frac{1}{2}\right) \cdot \left(\frac{\pi^2}{6}\right) = \frac{\pi^2}{12}$.

Answer. $\frac{\pi^2}{12}$.

RELATED QUESTIONS

 $\frac{1+1/4+1/9+1/16+...}{\text{(answered by Edwin McCravy)}} = ?$

<u>1+(1/4)+(1/9)+(1/25)+.....=?</u> (answered by **rothauserc,math_helper,ikleyn**)

If 4+4=6 25+25=45 16+16=28 9+9=15 1+1=2 (answered by ikleyn, Alan 3354)

<u>1-4+9-16+----</u> (answered by **solver91311**)

<u>1, -4, 9,...</u> (answered by **Alan3354**)

<u>(1/16)^-(1/4)...</u> (answered by jim_thompson5910)

<u>Write the following in summation notation:</u> 1/12 + 1/13 + 1/14 + 1/15 + 1/16 3/4 + ... (answered by **richard1234**)

<u>solve the following; (-1/64)^-1/3</u> (16/81)^-3/4 (1/Radical32)^-2/5 -(1/25)^-4/3... (answered by **ewatrrr**)

 $\frac{1/4m+9=-16}{\text{jim thompson5910}}$ (answered by