For a real number $x$ let \( \{x\} \) denote the nearest integer to \( x \), with the convention that we round down in case \( x \) is half-way between two consecutive integers. Evaluate

\[
\sum_{n=1}^{\infty} \frac{1}{\{\sqrt{n}\}^3}.
\]

You may use the fact that \( \sum_{n=1}^{\infty} \frac{1}{n^{2}} = \frac{\pi^2}{6} \).

Solutions should be submitted to Morgan Sherman:

Dept. of Mathematics, Cal Poly
Email: sherman1 -AT- calpoly.edu
Office: bldg 25 room 310

before next Friday. Those with correct and complete solutions will have their names listed on the puzzle’s web site (see below) as well as in next week’s email announcement. Anybody is welcome to make a submission.

http://www.calpoly.edu/~sherman1/puzzleoftheweek