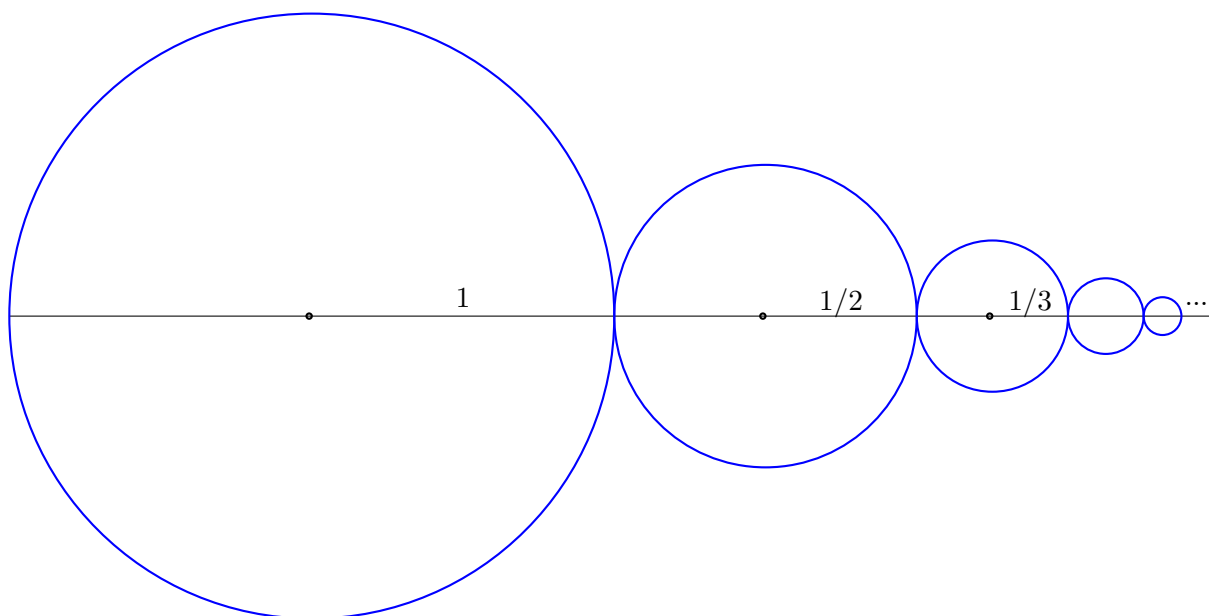


5. [6 points] O-guk is eating pizzas! All is well now, so he got hungry. He has put them next to each other, as depicted below, so that he can devour them one after another. There are infinitely many pizzas, and they have radii $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \dots$. The following figure shows the first five pizzas.



- a. [4 points] Write infinite series for the total area and the total perimeter of the pizzas. You must write your series in sigma notation.

Total area: $\sum_{n=1}^{\infty} \frac{\pi}{n^2}$

Total perimeter: $\sum_{n=1}^{\infty} \frac{2\pi}{n}$

- b. [2 points] In the next two questions **circle** the correct answer.

Is the total area a finite number?

YES

NO

Is the total perimeter a finite number?

YES

NO