Python – Poly Sum

Purpose
This lab was designed to reinforce the idea of decomposition by processing data via functions and outputting the result.

Description
Write 3 functions called area, perimeter and polysum. All 3 take two arguments, n (the # of sides of a regular polygon) and s (the length of each side). polysum should return the sum of the area and square of the perimeter rounded to 4 decimal places (i.e. area + perimeter * perimeter). Be sure to call polysum from main.

area of a regular polygon = $(.25*n*s*s) / \tan(\pi/n)$

perimeter of a regular polygon = n * s

```python
def polysum(n, s):
    """ Calculates the area of a regular polygon with n sides plus the perimeter squared.

    polysum = area + perimeter ** 2

    Args:
        n (int): The number of sides of a regular polygon
        s (float): The side length of a regular polygon

    Returns:
        float: the sum of perimeter ** 2 + area rounded to 4 places
    """
    # add your code
```

Program Shell
Create a file called poly_sum.py

Sample Data

n	s
49	79
56	48
76	51
26	56
17	49
46	89
55	84
5	22
47	83
28	5

Sample Execution

```
16175446.5049
7799715.2942
16218217.2584
2287813.3436
748476.916
18092546.5918
23041085.7253
12932.7111
16426991.0527
21153.168
```