Simple types and strings (1)   X26735_en

You have to program several functions. In each case, few lines of code are enough.

1. Write a function *drawH*(*n*) that given an odd integer $n \geq 3$ prints a letter H of size *n* formed with symbol *. Follow the pattern of the example below.

2. Write a function *area_circle*(*r*) that given a float number $r \geq 0$ returns, rounded to the hundredth, the area of the circle of radius *r*. Use the pi constant defined in the math module.

3. Write a function *slow_pi_aprox*(*n*) that given a non negative integer *n* computes $4 \sum_{k=0}^{n} \frac{(-1)^k}{2k+1}$ rounded to the hundredth.

4. Write a function *is_univariate_number*(*n*) that given a non negative integer returns a boolean pointing out whether *n* is represented using only one digit. For instance 22222 is univariate but 22322 is not.

5. Write a boolean function *is_univariate_word*(*s*) that given an string *s* returns True if and only if *s* is formed using only one letter. For instance word xxXxXXx is univariate but xxXxy is not. We assume *s* is non empty and all characters of *s* are letters.

Scoring

Every function counts 20 points.

Sample session

```
>>> drawH(5)
*   *
*   *
*****
*   *
*   *
>>> area_circle(2.5)
19.63
>>> slow_pi_aprox(50)
3.16
>>> is_univariate_number(22322)
False
>>> is_univariate_word("xxXxXXx")
True
```

Problem information

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