

Problem Wk.5.3.10: As close as necessary

Define a procedure `numTerms(eps)`, which returns the smallest value of n so that the value of

$$\pi/4 = \sum_{k=0}^{n-1} \frac{(-1)^k}{2k+1}$$

is within `eps` of π . Your function should have type `float -> positiveInt`. Assume that the procedure `piSeries` has been defined for you. You can use the constant `math.pi` for the true value of π

We advocate defining and using a helper procedure `within(x, y, eps)` that returns `True` if x is within `eps` of y . You can assume that the procedure `between`, which we defined in a previous exercise, is available to you.

It's okay if your procedure is pretty slow; but you might find it interesting to think about how to make it take an amount of time that doesn't grow linearly with the answer.



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