L5 PROBLEM 2 (2/2 points)

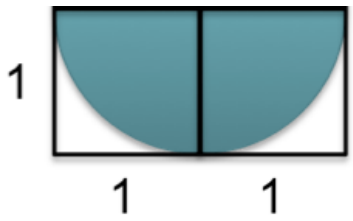
If you remember from the previous lecture (on the Buffon Needle Problem), the ratio of the areas of a circle and a square are used to estimate the value of π by dropping needles onto the shapes, like so:

$$\pi = \frac{(\text{area of square})(\text{needles in circle})}{\text{needles in square}}$$

We can imagine that using different area ratios results in the estimation of different constants.

In the following boxes, you will be asked to enter in mathematical expressions. To enter in addition, multiplication, subtraction, or division, use the operators: +, *, -, /. To enter in exponentiation, use the caret (^) key. To enter in the constant π, simply type pi.

1. What constant can you estimate using the following picture?



pi / 2

$\frac{\pi}{2}$

Answer: pi/2

2. Download the code used in the lecture "Finding Pi". If we now want to estimate the constant from the picture above, what should the number '4' in the line: `return 4*(inCircle/float(numNeedles))` be changed to?

2

2

Answer: 2

EXPLANATION:

There are only two quadrants you want to count in the estimate of the constant, and the operation `(inCircle/float(numNeedles))` only counts needles dropped in one quadrant of the circle.

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