

MAA-SE 2020 Pi Day Contests

We invite all undergraduates in the Southeastern Section to participate in the following Pi Day contests to celebrate our “virtualized” 99th annual meeting.

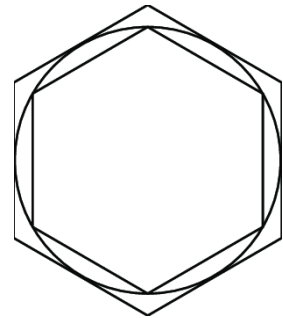
Thanks to **Princeton University Press** for providing book prizes for our contests!

Pi Day Challenge Problems

All correct solutions to each of the following problems will be entered in a drawing for a math book from Princeton University Press.

Problem 1 – Entries due March 21, 2020

The value of π is defined as the ratio of a circle’s circumference to its diameter. Therefore, if we can estimate the circumference of a unit circle (exactly equal to 2π), we can estimate the value of π . One estimate can be obtained by averaging the perimeters of an inscribed and circumscribed regular hexagon (see image at right). What is the approximate value of π , rounded to two decimal places, with this method?



Submit answers at <https://forms.gle/fDb7ggYCvwwVh2wR9>.

Problem 2 – Entries due April 4, 2020

It is well-known that 39 digits of π are all you need to calculate the circumference of the known universe to within the width of a hydrogen atom. What if we go the other way, using π to calculate the radius of a round object whose circumference we know?

The meter was originally defined in 1793 so that the circumference of a perfectly spherical Earth would be 40,000 km. (In fact, the circumference of Earth at the Equator is 40,075 km.) Using this value for the circumference of Earth, how many digits of π are needed to calculate the radius of Earth to within 1 cm? Note that the first “3” counts as one digit.

Submit answers at <https://forms.gle/3BDU5iXJMekwya1y5>.

Pi-Ku Contest – Deadline April 4, 2020

A pi-ku is a poem where each line has as many syllables as the corresponding digit in pi. So a three-line pi-ku would have lines with three syllables, one syllable, and four syllables. Here are two example pi-kus:

Pi-Day’s here	Oh, chicken!
Sigh	Yum!
Not good at math	Tastes good in pie.
-- Mark Memmott, NPR	-- reach.then.teach/Instagram

Write your own pi-ku! The top three entries will win a book from Princeton University Press, and all entries will be entered in a random drawing for a book prize. Entries will be judged on natural flow of language and creativity, with bonuses given to mathematically-themed poems (beyond the format) and

poems that extend beyond three lines. Count carefully! Entries with lines with the wrong number of syllables will be disqualified.

Submit entries by email to andrew.miller@belmont.edu on or before April 4, 2020