Math-Circle: Session 2

TIFR-CAM and ICTS

November 7, 2022

Problem 1 (Revisiting π). Theme: Don't take anything for granted. Revisit even those things which may seem obvious!!

It is now a common knowledge that length of circumference of a circle with diameter d is πd. But, if you think for a moment, what does π mean? It is just a symbol assigned to a number whose exact value can never be known. We do know it is approximately $22/7$ or 3.14. So what is π? In fact, one of the earliest definition of π is the ratio of the length of circumference to the diameter of any circle. But, if you are a mathematician, to make sure that this definition is a proper definition, you must verify that ratio of the length of circumference to the diameter is same for any two circle. Then, you would give a name to that ratio which is common for any two circle, and that name is the π.

Verify that ratio of the length of circumference to the diameter is the same for any two circle .