

Pi Day maths for CBSE Class 10

CBSE Math Revision · CBSE Class 10 (Class 9 can try most of it) · 14 March · Student sheet

Name _____

Class _____

Date _____

No calculator. Use $\pi = 22/7$ where a question says so.

Starter (5 minutes)

1. Find the circumference of a circle of radius 7 cm. (Use $\pi = 22/7$.)
2. Find the area of a circle of radius 14 cm. (Use $\pi = 22/7$.)
3. $22/7 = 3.142857142857...$ How many digits are in the repeating block?
4. A point is chosen at random inside a square of side 2. What is the probability that it lies inside the circle of radius 1 drawn in the square? Give your answer in terms of π .

Main activity (35 minutes)

Task A: Fractions and π

π is irrational: its decimal expansion never ends and never repeats. $22/7$ and $355/113$ are rational numbers close to it.

- a. Divide 22 by 7 by long division and write down the repeating block of digits.
- b. Find $355/113 - 22/7$ as a single fraction.
- c. Find a rational number between $355/113$ and $22/7$ by adding the numerators and adding the denominators.

Task B: π from a dartboard

A square board of side 28 cm has a circle of radius 14 cm drawn inside it, touching all four sides. Darts land at random on the board. Use $\pi = 22/7$.

- a. Find the area of the circle, the area of the square, and the probability that a dart lands inside the circle.
- b. 700 darts are thrown. How many would you expect inside the circle?
- c. In a class experiment, 546 of 700 darts land inside the circle. Use the exact probability $\pi/4$ to estimate π from this result.

Task C: Wheels and tracks

Use $\pi = 22/7$.

- a. A wheel has radius 35 cm. How far does it roll in one turn? How many turns does it make in 1.1 km?
- b. A circular running track has inner radius 70 m and outer radius 77 m. Find the area of the track.
- c. How much further is one lap around the outer edge than around the inner edge?

Extension

1. $\pi/4 = 1 - 1/3 + 1/5 - 1/7 + \dots$ Use the first 4 terms to find an estimate of π as a fraction.
2. A circle is drawn inside a square of side 14 cm, touching all four sides. Find the area of the square outside the circle. (Use $\pi = 22/7$.)