

Pi Approximation Day puzzles for CBSE Class 9 and 10

CBSE Math Revision · CBSE Class 9 and 10 · 22 July · Student sheet

Name _____

Class _____

Date _____

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

Starter (5 minutes)

1. Write $22/7$ as a mixed number.
2. Find the circumference of a circle of diameter 14 cm. (Use $\pi = 22/7$.)
3. Find the area of a circle of radius 7 cm. (Use $\pi = 22/7$.)
4. Is $22/7$ rational or irrational? Is π ?

Main activity (30 minutes)

Task A: The decimal of $22/7$

Rational numbers have decimal expansions that end or repeat.

- a. Divide 22 by 7 by long division until the remainders repeat. What is the repeating block?
- b. What is the 100th digit after the decimal point of $22/7$?
- c. Without dividing, explain whether $355/113$ has a terminating decimal expansion.

Task B: Rational numbers near π

$22/7$ and $355/113$ are both close to π .

- a. Find $22/7 - 355/113$ as a single fraction. Which of the two fractions is bigger?
- b. Find a rational number between $355/113$ and $22/7$ by adding the numerators and adding the denominators.
- c. Archimedes showed that π is between $223/71$ and $22/7$. Find the difference between these two fractions.

Task C: Circle puzzles

Use $\pi = 22/7$.

- a. A circle has circumference 88 cm. Find its radius and area.
- b. A wheel of diameter 63 cm makes 500 turns. How far does it travel, in metres?
- c. Find the area of a sector of radius 21 cm and angle 60° .

Extension

1. A square and a circle have the same perimeter, 88 cm. Which has the bigger area, and by how much? (Use $\pi = 22/7$.)