Children’s Day maths puzzle challenge for CBSE Class 9 and 10: Class 11

CBSE Math Revision · CBSE Class 11 (no calculator) · 14 November · Student sheet

Name _____ Class _____ Date _____

No calculator. Every answer works out exactly.

Starter (5 minutes)

1. Find ${}^5P_2$.

2. Find $i^4 + i^2$.

3. Find the sum of the first 20 natural numbers.

4. Find the slope of the line $3x - 4y + 8 = 0$.

Main activity (30 minutes)

Task A: Round 1: algebra

Children’s Day puzzles for Class 11.

a. Find the 8th term of the GP 2, 6, 18, …

b. In how many ways can 6 children sit in a row if two friends must sit next to each other?

c. Find the coefficient of x^3 in the expansion of $(1 + 2x)^5$.

Task B: Round 2: coordinates, sets and limits

More puzzles.

a. Find the distance between $(-1, 2)$ and $(5, 10)$.

b. In a class of 40, 25 like cricket, 20 like football and 10 like both. How many like neither?

c. Find the centre and radius of the circle $x^2 + y^2 - 4x + 6y - 12 = 0$.

d. Find the limit of $(x^2 - 4)/(x - 2)$ as $x \to 2$.

Extension

1. How many diagonals does a 10-sided polygon have?