



Cheenta
Passion for Mathematical Science
Problem Solving marathon

Instructor's Name: Ashani Dasgupta
Document Type: Problem Solving

Reference: Group 1
Date: 14.02.19

-
- The Set comprises three levels of questions as following-
Level 0- for Class **III-V**
Level 1- for Class **VI-VIII**
Level 2- for the rest
 - You have to write the answers on paper, take clear pictures, and upload them as image file on Google Classroom, in which you are assigned.
 - You may contact Shubhadip Ghosh through Skype
 - Solve as much as you can, even if you cannot solve fully write whatever your idea is.

1 Level 0

Q.1) football game was played between two teams, the Bengaluru FC and the Delhi Dynamos FC. The two teams scored a total of 34 points, and the Bengaluru FC won by a margin of 14 points. How many points did the Delhi Dynamos FC score?

Q.2) For each pair of real numbers $a \neq b$, define the operation \star as

$$(a \star b) = \frac{a+b}{a-b}.$$

What is the value of $((1 \star 2) \star 3)$?

2 Level 1

Q.1) The second and fourth terms of a geometric sequence are 2 and 6. Which of the following is a possible first term?

Q.2) Quadrilateral $ABCD$ has $AB = BC = CD$, angle $ABC = 70$ and angle $BCD = 170$. What is the measure of angle BAD ?

3 Level 2

Q.1) Find the set of all values of m such that $y = \frac{x^2 - x}{1 - mx}$ can take all real values.