

MATHEMATICAL ANALYSIS

AIMS

Grasp an intuition of some of the objects studied in mathematical analysis, such as *sequences, series, tangent lines*, and *areas*.

RESOURCES

PowerPoint, paper, pen, coloured pencils.

Each activity needs to be properly introduced by a detailed discussion (at least 10-15 mins each).

ACTIVITY 1: SEQUENCES (15 mins)

Guessing the pattern.

Guessing the asymptotics.

ACTIVITY 2: TANGENT LINES (10 mins)

Draw tangent lines as limit of secant lines.

ACTIVITY 3: SERIES (15 mins)

Summing consecutive numbers (algebraic and geometric approach).

Geometric series, filling the square with squares.

ACTIVITY 3: AREAS (10 mins)

Draw the surface of a circle as limit of polygons.