

MATH FOR EXCELLENCE CURRICULUM

Excel 5

Polynomial equations and functions of third and higher degree

1. Polynomials of 3rd and higher degree, division of polynomials
2. Equations of 3rd and higher degree
3. Remainder and factor theorems
4. Rational zero theorem
5. Radical equations
6. Solving of 3rd and higher degree polynomial equations
7. Functions of 3rd and higher degree: domain, range, zeros and graph
8. Word problems related to the polynomial equations and functions

Similarity of triangles

1. Proportionality in geometry
2. Definition of similar triangles, Thales theorem
3. Solving word problems related to similarity of triangles
4. Similarity of other geometric figures
5. Using similarity to solve some geometry construction problems

The Circle

1. Theorem about central and inscribed (peripheral) angle in a circle
2. Tangents to a circle
3. Cyclic quadrilaterals (inscribed and circumscribed)
4. Word problems related to cyclic quadrilaterals



Trigonometry of a right triangle

1. Definition of a trigonometric function
2. Trigonometry of a right triangle
3. Values of trigonometric functions of 0° , 30° , 45° , 60° , and 90°
4. Word problems related to trigonometry of a right triangle

Arithmetic and geometric sequences and series, compound interest

1. Definition of a sequence, examples
2. Arithmetic sequence and series
3. Geometric sequences and series
4. Compound interest
5. Infinite geometric series
6. Word problems related to arithmetic and geometric sequences and series

