

MATH FOR EXCELLENCE CURRICULUM

Excel 3

Set of real numbers

The set of real numbers (from natural numbers to real numbers)

- Operations in the set of rational numbers
- Powers with the integer exponents
- Monomials, polynomials, factorisation of polynomials
- Multiplication and division of polynomials
- The greatest common factor and the least common multiple of numbers and polynomials
- Arithmetic fractions: addition, subtraction, multiplication and division
- Decimal numbers, relation between decimals, fractions, tables and graphs
- Square root and powers with rational exponents
- Rationalization of a denominator

Pythagorean theorem

- Pythagorean theorem
- Word problems solved using Pythagorean theorem

Circle

- Definition of a circle, number π
- Perimeter and area of a circle
- Cord of the circle
- Arc length and sector area
- Perimeter and area of a triangle and quadrilaterals
- Angles and polygons, interior and exterior angles
- Regular polygons: angles and diagonals

Linear equations and inequalities with one variable

- One-variable linear equations
- Solving word problems of first degree using one-variable linear equations
- Solution of one-variable linear inequality – numerical and graphical interpretation
- Solving system of two or more linear inequalities with one variable

- Absolute value of a real number
- Equations and inequalities with absolute values
- Cartesian coordinates and graphing
- Linear function and graphical interpretation
- Finding the intersection of two linear functions (by graphing)

System of linear equations in two variables

- Definition of a linear equations with two variables
- Graphical representation of linear equation with two variables, linear function
- Distance between two points in coordinate plane
- Systems of two linear equations with two variables, graphical solution
- Solving systems of two linear equations with two variables by substitution
- Solving systems of two linear equations with two variables by elimination
- Word problems related to the system of linear equations with two variables
- Solving system of linear inequalities with two variables by graphing

Volume and surface area of solids

- Cube
- Prizm
- Pyramid
- Truncated (cut) pyramid
- Cylinder
- Cone
- Truncated (cut) cone
- Sphere