

MATH FOR EXCELLENCE CURRICULUM

Excel 6

Transformation of functions

- Domain and range of a function
- Translating graphs of functions
- Reflecting graphs of functions
- Stretching graphs of functions
- Inverse functions
- Combination of transformations
- Even and odd functions

Exponential functions and equations

- Defining an exponential function
- Domain and range of an exponential function
- Graph of an exponential function
- Exponential equations
- Word problems related to exponential equations

Logarithm functions and equations

- Inverse functions – Review
- Defining a logarithm
- Laws of logarithms
- Logarithm function and its graph
- Domain and range of a logarithm function
- Logarithm equations
- Word problems solved using logarithms

Trigonometric functions of any angle

- Radian measure of angles
- Angles in standard position
- Definition of trigonometric functions sine, cosine, tangent, and cotangent

- Values of trig. functions angle of 0° , 30° , 45° , 60° , and 90° , (or 0 , $\frac{\pi}{6}$, $\frac{\pi}{4}$, $\frac{\pi}{3}$, $\frac{\pi}{2}$ radians)
- Unit circle, values of trigonometric functions on unit circle
- Periods and amplitudes of trigonometric functions
- Graphing sine and cosine functions
- Graphs of other trigonometric functions
- Solving word problems using trigonometric functions

Trigonometric equations

- Trigonometric identities, theorems of addition
- Trigonometric equations
- Trigonometric inequalities
- Word problems related to trigonometric functions

Conic sections

- Definition of conic sections: circle, ellipse, hyperbola, and parabola
- Equation of a circle
- Equation of an ellipse
- Equation of a hyperbola
- Equation of a parabola
- Intersection of a line with the curves of the conic sections
- When a line is the tangent of a curve from the conic sections
- Word problems related to the conic sections