POLYNOMIALS

Characteristics from Graph

Determine characteristics by analyzing a graph:

- x and y intercepts
- turning points
- local maximum / minimum
- absolute maximum / minimum
- Domain and Range
- y when x is known
- x when y is known
- start and end quadrant

Types of Polynomials

- Linear $y=ax+b$ 
- Quadratic $y=ax^2+bx+c$ 
- Cubic $y=ax^3+bx^2+cx+d$ 

Graph Equations and Analyze

Use Graphing Calculator to graph given equations and analyze them:

A. Enter Equation and Graph
↳ [Y=], [GRAPH]

B. Adjust Window Settings
↳ [WINDOW] Use context and [TABLE] to help choose window settings.

C. Determine y when x is known
↳ [CALC], [1: Value], X=□

D. Determine x when y is known
↳ Y_2=□, [CALC], [5: INTERSECT]

E. Determine y-intercept
↳ Determine y when x=0 using C.

F. Determine x-intercept
↳ Determine x when y=0 using D.

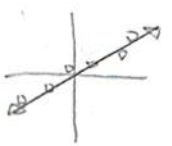
G. Determine maximums / minimums
↳ [CALC], [3: minimum], [4: maximum]

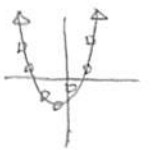
Modelling

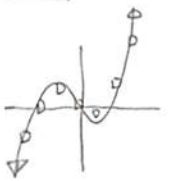
Solve problems by modelling a scenario with an equation. Determine equation using the following methods:

① Regression with Graphing Calculator

- Enter Data into Lists [STAT], [1: Edit]
- Turn Plot 1 On and Graph (adjust window settings as needed)
- Determine Regression Equation
  ↳ [STAT], [CALC], select regression...
- Graph Regression Equation
  ↳ [Y=], [VARS], [5: Statistics], EQ menu, [1: RegEQ]


LinReg (ax+b)


QuadReg


CubicReg

② Determine an equation from the description of the problem.