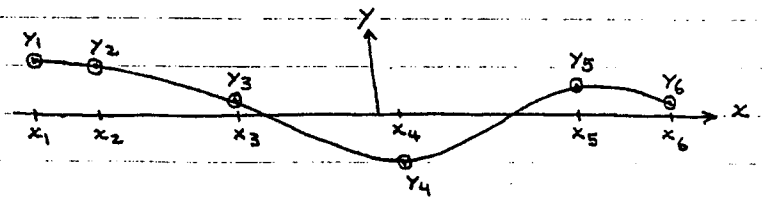
Neil E Cotter
19 r 1994

tool:



A cubic spline is a set of cubic polynomials for interpolating between data points. Each interval between data points has a corresponding cubic polynomial. These cubic polynomials are calculated to satisfy the following requirements:

1) The first derivative, dy/dx, or y' is continuous at the data points.
2) The second derivative, d^2y/dx^2 or y'' is continuous at the data points.

term: The x values $x_1, x_2, \ldots, x_N$ of the data points are called the knots of the spline.

note: The knots need <u>not</u> be uniformly spaced.

def: natural cubic spline ≡ the indeterminate derivatives at the endpoints, y_1'' and y_N'' are set to $y_1'' = 0$ and $y_N'' = 0$.

note: An alternative method of determining the behavior at the endpoints x_1 and x_N is to specify values for y_1' and y_N', i.e. specify the first derivatives or slopes of y at the endpoints.