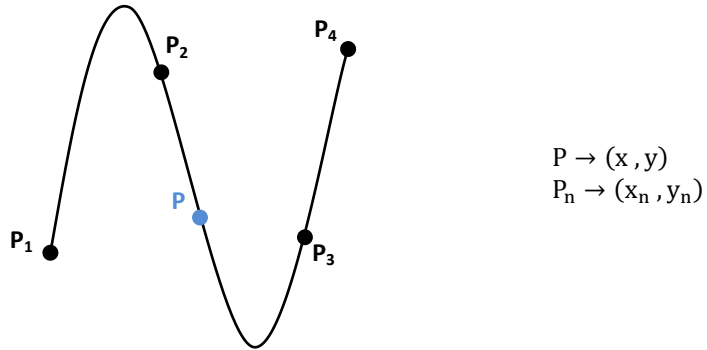


Polynomial Interpolation

Polynomial interpolation determines the value of a given point by fitting an n^{th} order polynomial through $n+1$ points surrounding the given value. The example below shows a 3rd order polynomial fit through 4 points.



The equation for a 3rd order polynomial is:

$$y = Ax^3 + Bx^2 + Cx + D$$

The values of A , B , C , and D are solved for by solving a set of linear equations using the method described [“Polynomial Curve Fit”](#).

$$Ax_1^3 + Bx_1^2 + Cx_1 + D = y_1$$

$$Ax_2^3 + Bx_2^2 + Cx_2 + D = y_2$$

$$Ax_3^3 + Bx_3^2 + Cx_3 + D = y_3$$

$$Ax_4^3 + Bx_4^2 + Cx_4 + D = y_4$$

Once the variables A , B , C , and D are calculated, y is calculated by plugging in x to the polynomial equation and solving.