

### **QUADRATIC INTERPOLATION:**

A Quadratic Spline is the creation of a set of polynomial functions that are quadratic, or, easier to understand, follow the format  $f(x)=ax^2+bx+c$ , where a, b and c are the values obtained while doing the Splines to create the desired functions.

### **EXAMPLE:**

Using quadratic interpolation find Y if  $x=15$

X	Y
10	30
20	60
30	90

### **FORMULA:**

$$f(x) = f(x_2) + \frac{(x - x_2)[f(x_3) - f(x_1)]}{2\Delta x} + \frac{(x - x_2)^2[f(x_1) - 2f(x_2) + f(x_3)]}{2\Delta x^2}$$
$$= 60 + \frac{(15-20)(90-30)}{2(10)} + \frac{(15-20)^2[30-2(60)+90]}{2(10)^2}$$
$$= 45$$