

05.01

Definition of Interpolation

After reading this chapter, you should be able to:

1. Understand what Interpolation is.

What is Interpolation?

Many a times, a function $y = f(x)$ is given only at discrete points such as $(x_0, y_0), (x_1, y_1), \dots, (x_{n-1}, y_{n-1}), (x_n, y_n)$. How does one find the value of y at any other value of x ? Well, a continuous function $f(x)$ may be used to represent the $n+1$ data values with $f(x)$ passing through the $n+1$ points. Then one can find the value of y at any other value of x . This is called interpolation. Of course, if x falls outside the range of x for which the data is given, it is no longer interpolation but instead is called extrapolation.

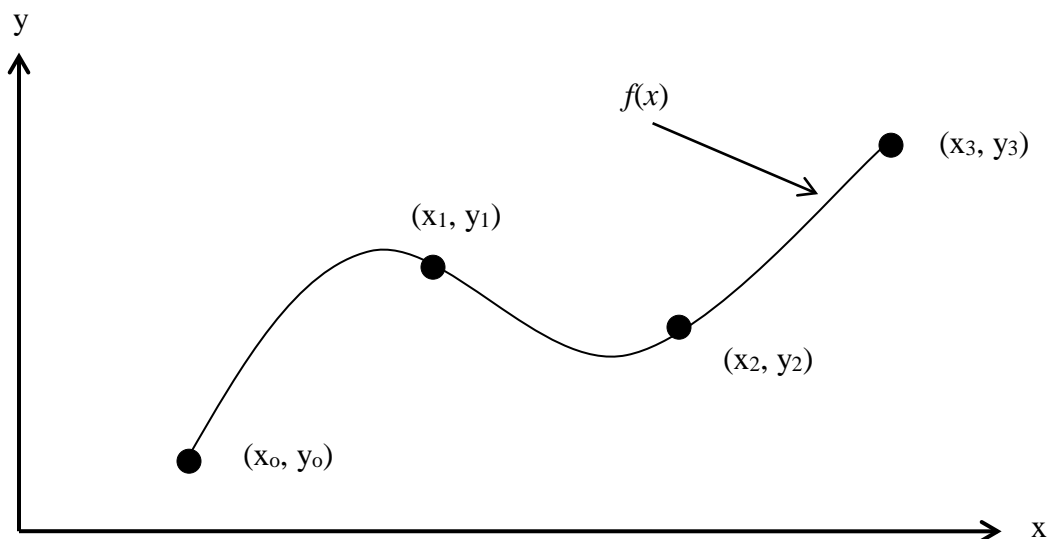


Figure 1 Interpolation of discrete data