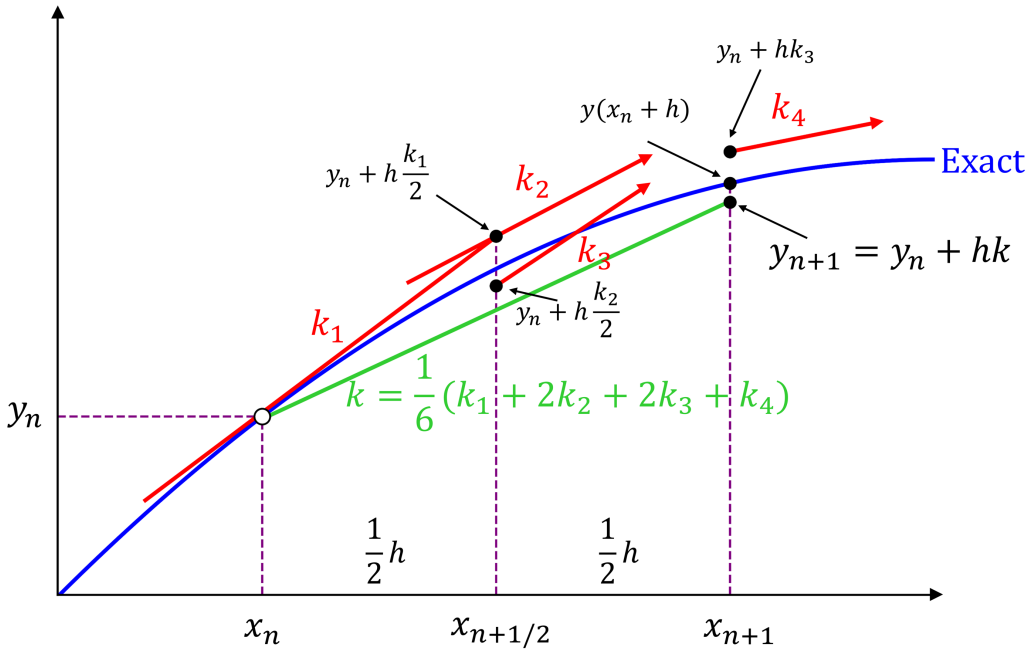

Figure 30. RK4.

RK4 method:

$$y_{n+1} = y_n + h\left(\frac{k_1}{6} + \frac{2k_2}{6} + \frac{2k_3}{6} + \frac{k_4}{6}\right)$$

where

$$k_1 = f(x_n, y_n)$$
$$k_2 = f\left(x_n + \frac{h}{2}, y_n + \frac{h}{2}k_1\right)$$
$$k_3 = f\left(x_n + \frac{h}{2}, y_n + \frac{h}{2}k_2\right)$$
$$k_4 = f(x_n + h, y_n + hk_3)$$

The average slope is

$$k = \frac{k_1}{6} + \frac{2k_2}{6} + \frac{2k_3}{6} + \frac{k_4}{6}$$

In fact, there are many variants to this set of parameters.

Further, in general, RK can be expressed as follows (Source: Wiki)