The difference between dy and Δy

dy is an approximation found by moving along the tangency. Δy is the difference between two points on the actual function $y = f(x)$. Given the function

$$y = x^2$$

the differential is

$$dy = 2xdx$$

suppose $x = 2$ and $dx = .01$ then the differential, dy is

$$dy = 2xdx = 2(2)(.01) = .04$$

The other change Δy is given by

$$\begin{aligned}
\Delta y &= (x + dx)^2 - x^2 \\
\Delta y &= (2.01)^2 - (2)^2 = 0.0401
\end{aligned}$$

See the Graph for the difference