

Exercise 1 Let $f(x) = \cos(x)$ and $a = \pi$. Observe the table of values for $\frac{f(a+h) - f(a)}{h}$:

| h | $\frac{f(a+h) - f(a)}{h}$ |
|-------|---------------------------|
| -0.1 | 0.0499583 |
| -0.01 | 0.00499996 |
| 0.01 | 0.00499996 |
| 0.1 | 0.0499583 |

The limit as $h \rightarrow 0$ is approximately 0.005.