

Exercise 1 Let $f(x) = \sin(x)$ 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	-0.998334
-0.01	-0.999983
0.01	-0.999983
0.1	-0.998334

The limit as $h \rightarrow 0$ is approximately -1.