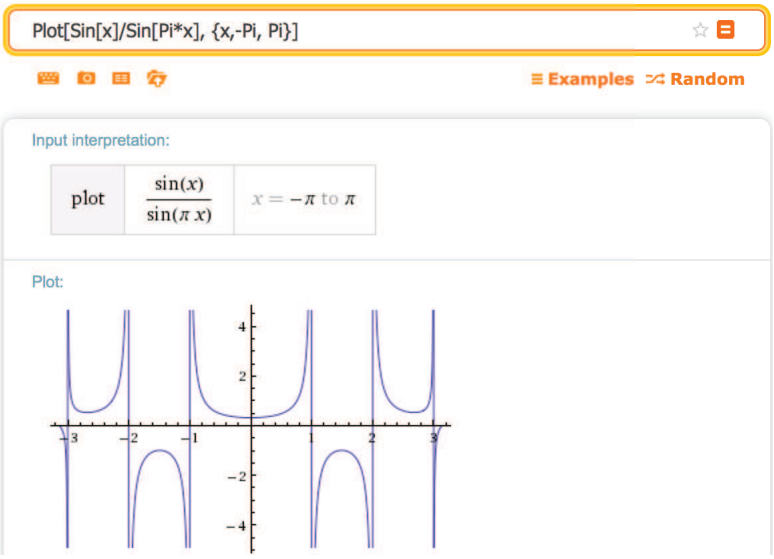
(a) *Estimate the value of*

$$\lim_{x \to 0} \frac{\sin(x)}{\sin(\pi x)}$$

by graphing the function $f(x) = \frac{\sin(x)}{\sin(\pi x)}$. *State your answer correct to two decimal places.*[1]



From WolframAlpha,it seems that $\lim_{x \to 0} \frac{\sin(x)}{\sin(\pi x)} \approx 0.35$.

(b) *Check your answer in part (a) by evaluating* $f(x)$ *for values of* x *that approach* 0.

x	$\frac{\sin(x)}{\sin(\pi x)}$
-0.01	0.318357
-0.001	0.318310
-0.0001	0.318310
0	undefined
0.0001	0.318310
0.001	0.318310
0.01	0.318357

From the table, it seems $\lim_{x \to 0} \frac{\sin(x)}{\sin(\pi x)} \approx 0.318310$.

[1] Stewart, *Calculus, Early Transcendentals*, p. 93, #30.