

Exercise 32

For the following exercises, consider the function $f(x) = (1 + x)^{1/x}$.

Make a table showing the values of f for $x = -0.01, -0.001, -0.0001, -0.00001$ and for $x = 0.01, 0.001, 0.0001, 0.00001$. Round your solutions to five decimal places.

x	$f(x)$		x	$f(x)$
-0.01	a.		0.01	e.
-0.001	b.		0.001	f.
-0.0001	c.		0.0001	g.
-0.00001	d.		0.00001	h.

Solution

Plug in the given values of x into the function.

- a. $f(-0.01) = [1 + (-0.01)]^{1/(-0.01)} \approx 2.73200$
- b. $f(-0.001) = [1 + (-0.001)]^{1/(-0.001)} \approx 2.71964$
- c. $f(-0.0001) = [1 + (-0.0001)]^{1/(-0.0001)} \approx 2.71842$
- d. $f(-0.00001) = [1 + (-0.00001)]^{1/(-0.00001)} \approx 2.71830$
- e. $f(0.01) = [1 + (0.01)]^{1/(0.01)} \approx 2.70481$
- f. $f(0.001) = [1 + (0.001)]^{1/(0.001)} \approx 2.71692$
- g. $f(0.0001) = [1 + (0.0001)]^{1/(0.0001)} \approx 2.71815$
- h. $f(0.00001) = [1 + (0.00001)]^{1/(0.00001)} \approx 2.71827$