

1. Fill in the tables, (use calculators if necessary) then guess what the *last* two boxes should be.

$\frac{1}{x^2}$...	???
x	-1	$\frac{1}{2}$	$-\frac{1}{4}$	$\frac{1}{9}$	$-\frac{1}{16}$	$\frac{1}{25}$	$\frac{1}{1000}$	$-\frac{3}{10^6}$	$-\frac{1}{10^{15}}$	$\frac{1}{10^{15}}$	$-\frac{1}{10^{20}}$...	???

$x \sin \frac{2\pi}{x}$...	???
x	-4	4	$-\frac{4}{301}$	$-\frac{4}{401}$	$\frac{4}{3}$	$\frac{4}{5}$	$\frac{4}{7}$	$\frac{4}{201}$	$\frac{4}{301}$	$\frac{4}{2001}$	$\frac{4}{3001}$...	???

$f(x)$...	???
x	-1	1	-0.1	0.1	-0.01	0.01	10^{-3}	-10^{-3}	-10^{-4}	10^{-4}	10^{-5}	...	???	

where $f(x) = \begin{cases} \sqrt{x} & \text{if } x \geq 0 \\ x^2 & \text{if } x < 0 \end{cases}$

2. For each of the tables in (1) write it as a limit; i.e. $\lim_{x \rightarrow a} f(x) = L$ where you fill in $f(x)$, a , and L .