In order to determine a limit, we must

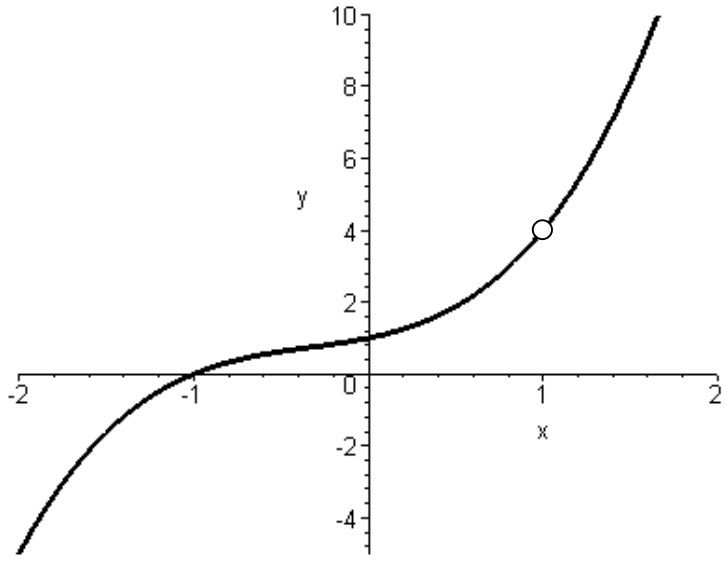
Ex: $f(x)=\dfrac{x^4-1}{x-1}$ What is the domain?

What happens to *f(x)* as *x* approaches 1 for values less that 1?

x	0	0.5	0.75	0.8	0.9	0.95	0.99	0.995	0.999
$f(x)=\dfrac{x^4-1}{x-1}$	1.0000	1.875	2.7344	2.9520	3.4390	3.7099	3.9404	3.9701	3.9940

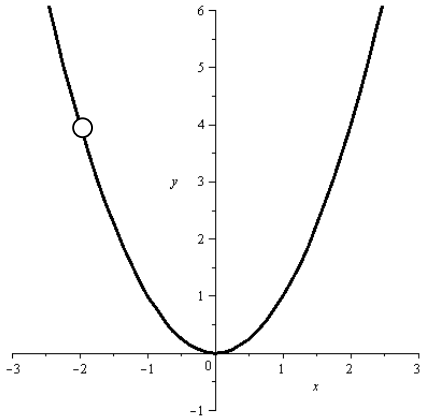
What happens to *f(x)* as *x* approaches 1 for values greater than 1?

x	1.001	1.005	1.01	1.05	1.1	1.2	1.25	1.5	2
$f(x)=\dfrac{x^4-1}{x-1}$	4.0060	4.0301	4.0604	4.3101	4.6410	5.3680	5.7656	8.1250	15.0000



Ex:

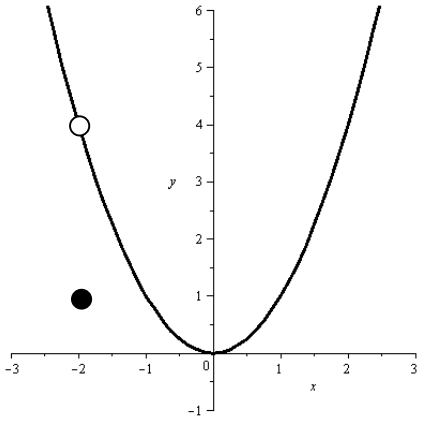
(a). $f_1(x) = \dfrac{x^3 + 2x^2}{x+2}$



What is the domain?

Find $\lim\limits_{x \to -2} f_1(x)$

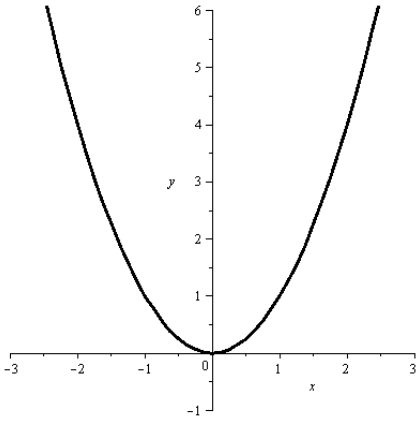
(b). $f_2(x) = \begin{cases} \dfrac{x^3 + 2x^2}{x+2} & , x \neq -2 \\ 1 & , x = -2 \end{cases}$



What is the domain?

Find $\lim\limits_{x \to -2} f_2(x)$

(c). $f_3(x) = x^2$



What is the domain?

Find $\lim\limits_{x \to -2} f_3(x)$

Note: