

HOMEWORK: infinite limits and limits at infinit

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Exercises
Find the limit if it exists

1. $\lim_{x \rightarrow -1^+} \frac{x-2}{x+1}$

$\lim_{x \rightarrow -1^+} = \cancel{\neq} \times -\infty$

2. $\lim_{x \rightarrow 2^-} \frac{x+2}{x^2-4}$

$\lim_{x \rightarrow 2^-} = \infty$

3. $\lim_{x \rightarrow 3^+} \frac{5}{3-x}$

$\lim_{x \rightarrow 3^+} \Rightarrow \infty \times -\infty$

4. $\lim_{x \rightarrow 0^-} \frac{2-4x^3}{5x^2+3x^3}$

$\lim_{x \rightarrow 0^-} = -0.75 \times \infty$

5. $\lim_{x \rightarrow -1^-} \frac{x^3+1}{2x+2}$

$\lim_{x \rightarrow -1^-} = \cancel{\neq} \times 1.5$

6. $\lim_{x \rightarrow 3^-} \frac{x^3+9x^2+20x}{x^2+x-12}$

?

7. $\lim_{x \rightarrow +\infty} \frac{x^2-1}{x^2+1}$

1

8. $\lim_{x \rightarrow \infty} \frac{x^2+x}{4-x}$

$\cancel{\neq}$

9. $\lim_{x \rightarrow +\infty} \frac{x^2-1}{x^3+x^2-4x-4}$

0

10. $\lim_{x \rightarrow \infty} \frac{8-x^3}{x^3-4x^2+4x}$

-1

-2.002 -2.027 -2.29 -29
-0.0009 -0.009 -0.09 -0.9

x	-0.9	-0.99	-0.999	-0.9999
f(x)	-29	-299	-2999	-29999

x	2.1	2.01	2.001	2.0001
f(x)	10	100	1000	10000

x	3.1	3.01	3.001	3.0001
f(x)	-50	-500	-5000	50000

x	-1.1	-1.01	-1.001	0
f(x)	-72	-79	-799	-

x	0.009	0.09	0.9	1
f(x)	.5095	.59	1.35	-

x	2.009	2.09	2.9	3
f(x)	-19.20	-16.28	-22.1	-