Mathematikè
tèkne

Analisi matematica

Asintoti

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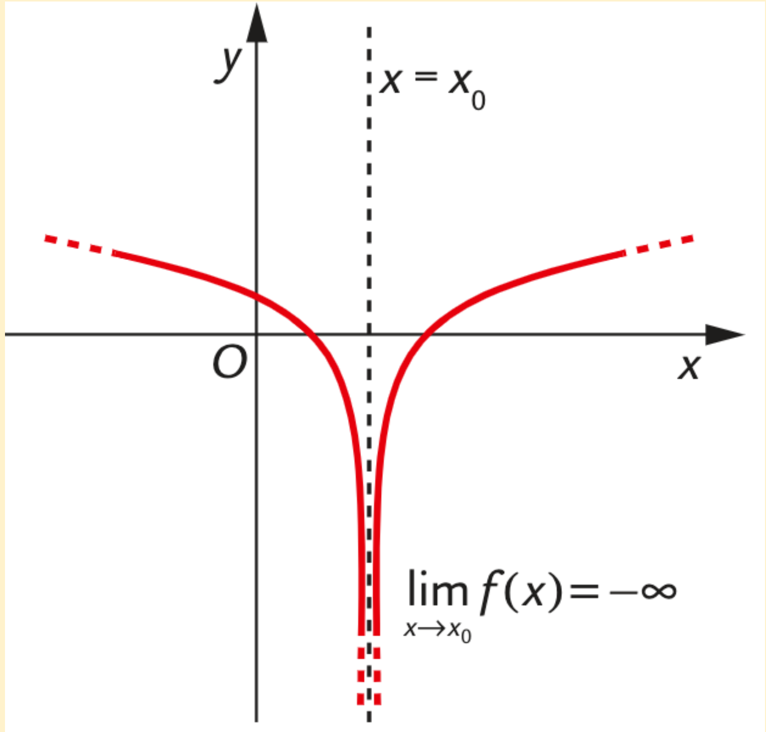
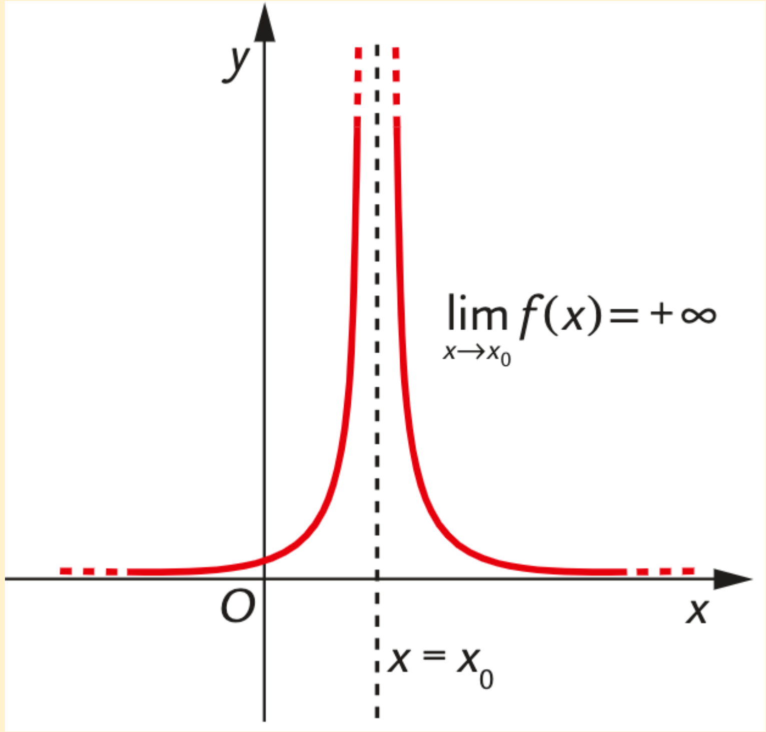
Limiti e asintoti

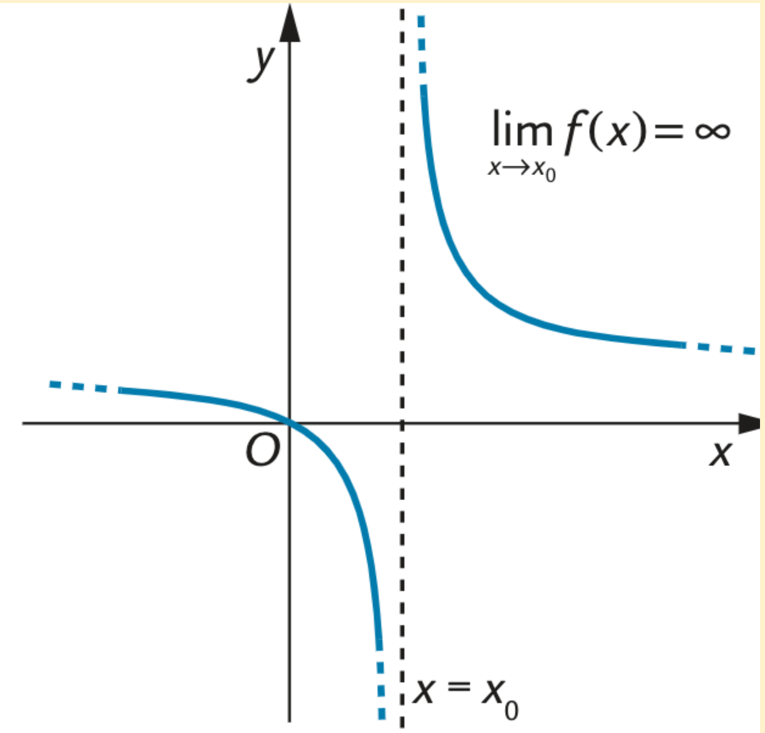
Asintoto verticale

Si dice che la retta di equazione $\boldsymbol{x = x_0}$ è un **asintoto verticale** per la funzione $\boldsymbol{y = f(x)}$ se, al tendere di $\boldsymbol{x}$ a $\boldsymbol{x_0}$, con $\boldsymbol{x_0 \in R}$,

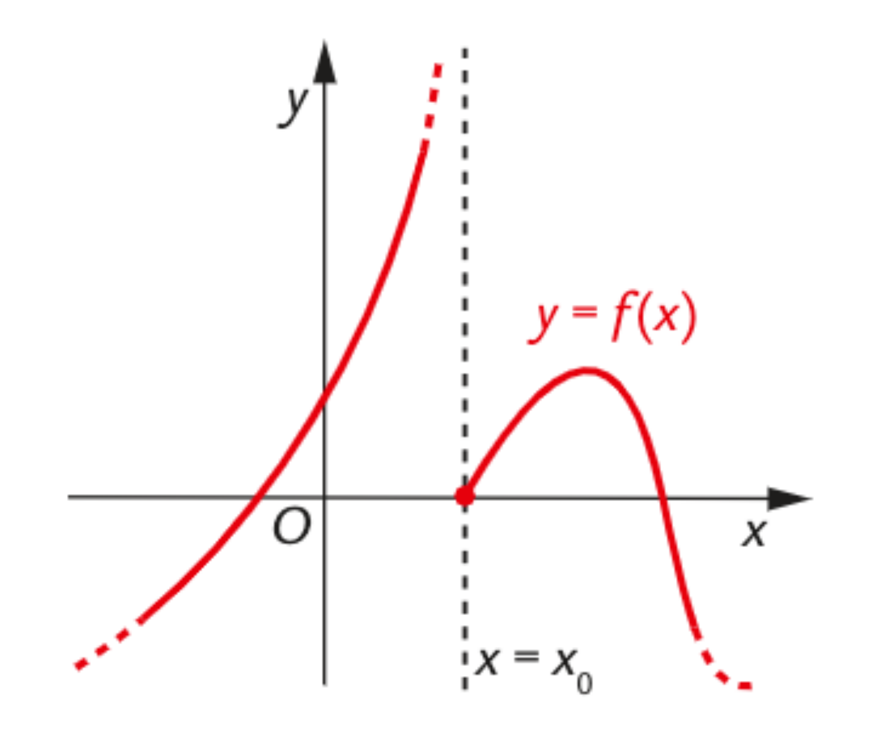
La funzione $\boldsymbol{f(x)}$ Tende a $+\infty$ o a $-\infty$ o a ∞





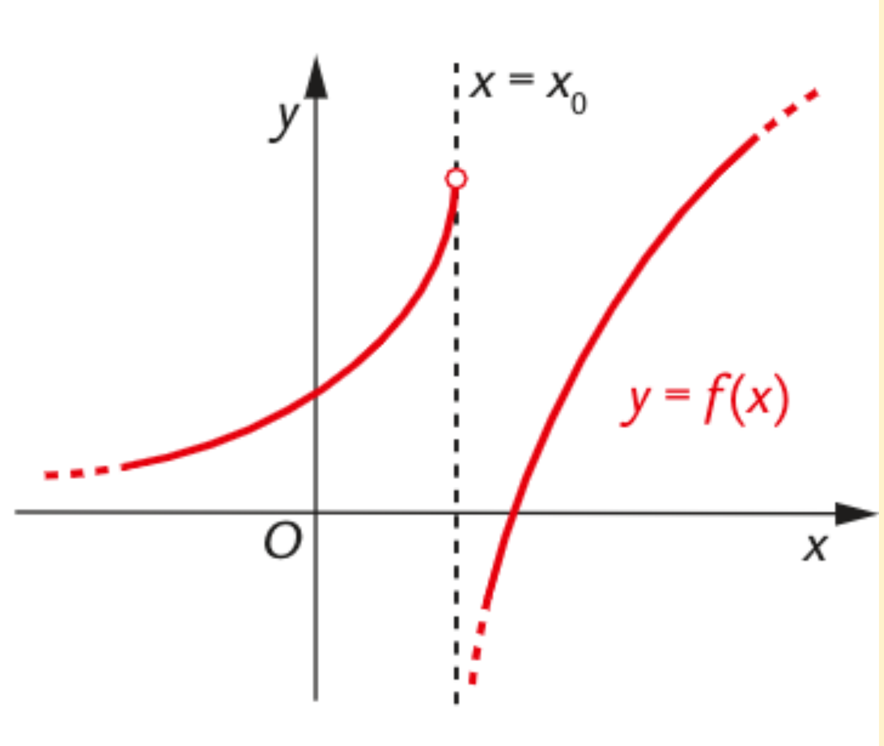


Asintoto verticale sinistro - destro



$$\lim_{x \to x_0^-} f(x) = \infty$$

Asintoto verticale sinistro

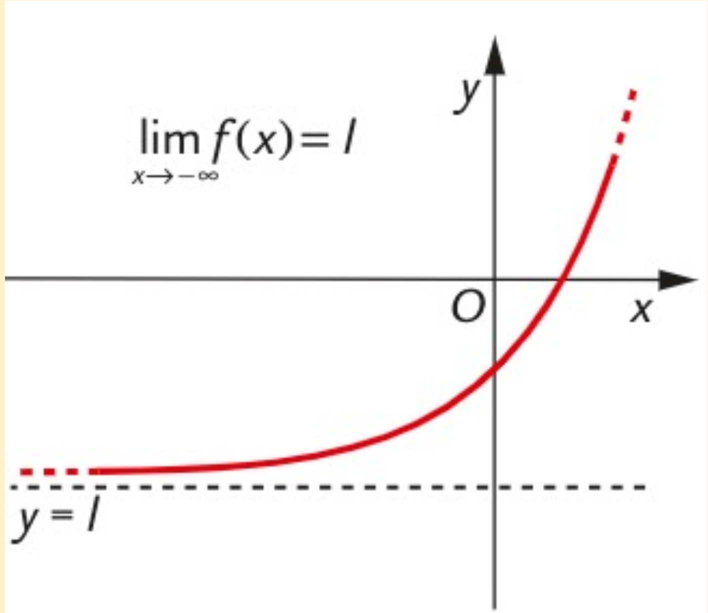


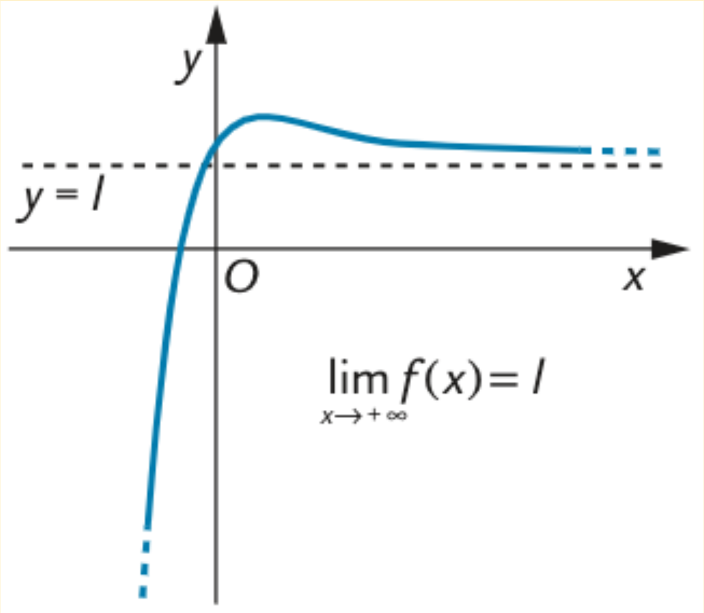
$$\lim_{x \to x_0^+} f(x) = \infty$$

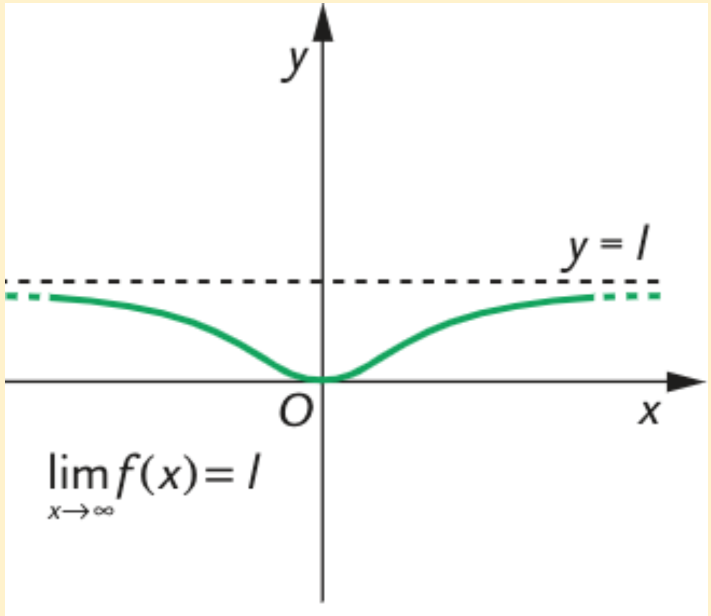
Asintoto verticale destro

Asintoto orizzontale

Si dice che la retta di equazione $y = l$ è un **asintoto orizzontale** per la funzione $y = f(x)$ se il limite al tendere di x a. $+\infty$ o a $-\infty$ o a ∞, è uguale a l







$$\lim_{x \to -\infty} f(x) = l$$

$$\lim_{x \to +\infty} f(x) = l$$

$$\lim_{x \to \infty} f(x) = l$$

ESERCIZI

Approccio numerico al concetto di limite

Completa le uguaglianze, deducendo dal grafico il valore dei limiti indicati, se esistono.

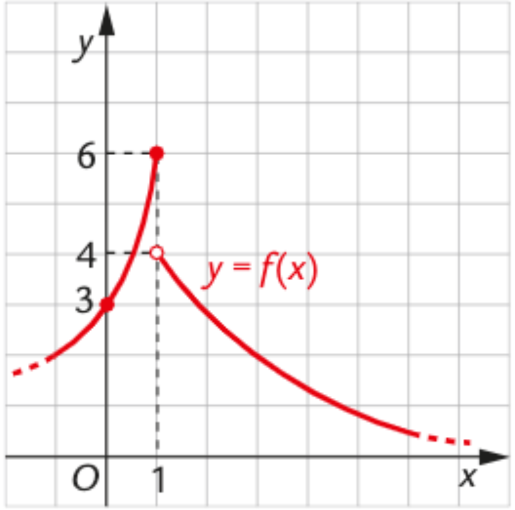
11 **a.** $\lim_{x\to 0} f(x) = \ldots\ldots\ldots\ldots$

b. $\lim_{x\to 1^-} f(x) = \ldots\ldots\ldots\ldots$

c. $\lim_{x\to 1^+} f(x) = \ldots\ldots\ldots\ldots$

d. $\lim_{x\to 1} f(x) = \ldots\ldots\ldots\ldots$

e. $\lim_{x\to +\infty} f(x) = \ldots\ldots\ldots\ldots$



12 **a.** $\lim_{x\to -\infty} f(x) = \ldots\ldots\ldots\ldots$

b. $\lim_{x\to -2^-} f(x) = \ldots\ldots\ldots\ldots$

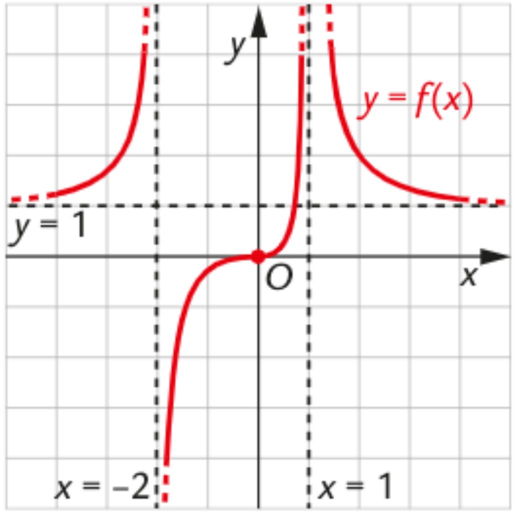
c. $\lim_{x\to -2^+} f(x) = \ldots\ldots\ldots\ldots$

d. $\lim_{x\to 0} f(x) = \ldots\ldots\ldots\ldots$

e. $\lim_{x\to 1^-} f(x) = \ldots\ldots\ldots\ldots$

f. $\lim_{x\to 1^+} f(x) = \ldots\ldots\ldots\ldots$

g. $\lim f(x) = \ldots\ldots\ldots\ldots$



Approccio numerico al concetto di limite

Completa le uguaglianze, deducendo dal grafico il valore dei limiti indicati, se esistono.

13 **a.** $\lim_{x \to -\infty} f(x) = \dots\dots\dots$

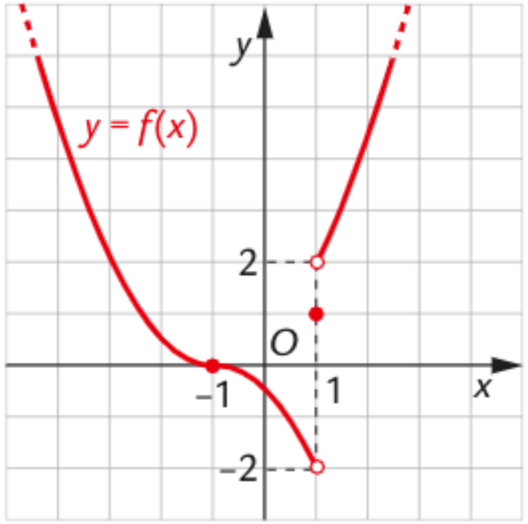
b. $\lim_{x \to -1} f(x) = \dots\dots\dots$

c. $\lim_{x \to 1^-} f(x) = \dots\dots\dots$

d. $\lim_{x \to 1^+} f(x) = \dots\dots\dots$

e. $\lim_{x \to 1} f(x) = \dots\dots\dots$

f. $\lim_{x \to +\infty} f(x) = \dots\dots\dots$



14 **a.** $\lim_{x \to -\infty} f(x) = \dots\dots\dots$

b. $\lim_{x \to -1^-} f(x) = \dots\dots\dots$

c. $\lim_{x \to -1^+} f(x) = \dots\dots\dots$

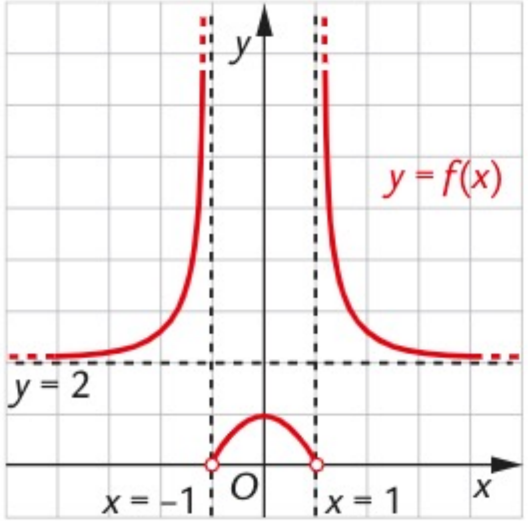
d. $\lim_{x \to -1} f(x) = \dots\dots\dots$

e. $\lim_{x \to 1^-} f(x) = \dots\dots\dots$

f. $\lim_{x \to 1^+} f(x) = \dots\dots\dots$

g. $\lim_{x \to 1} f(x) = \dots\dots\dots$

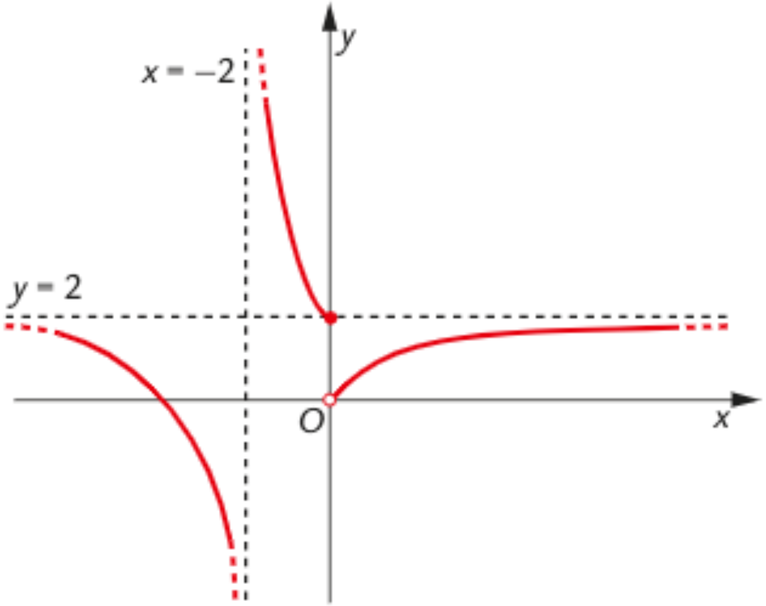
h. $\lim_{x \to +\infty} f(x) = \dots\dots\dots$



Approccio numerico al concetto di limite

Completa le uguaglianze, deducendo dal grafico il valore dei limiti indicati, se esistono.

15



a. $\lim_{x\to-\infty} f(x) =$ ....

b. $\lim_{x\to-2^-} f(x) =$ ....

c. $\lim_{x\to-2^+} f(x) =$ ....

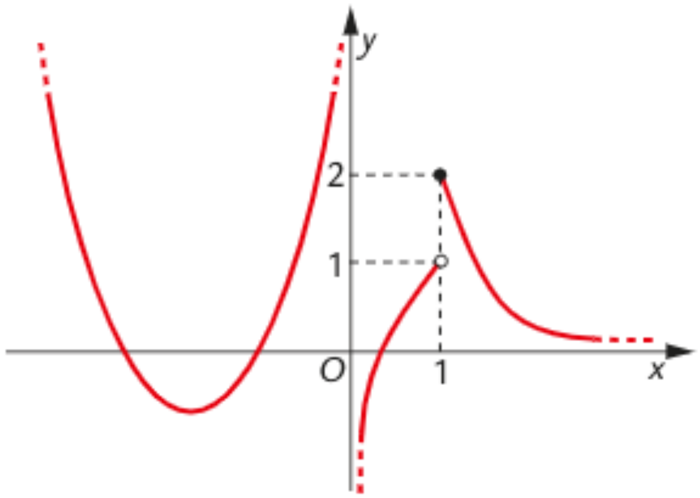
d. $\lim_{x\to0^-} f(x) =$ ....

e. $\lim_{x\to0^+} f(x) =$ ....

f. $f(0) =$ ....

g. $\lim_{x\to+\infty} f(x) =$ ....

16



a. $\lim_{x\to-\infty} f(x) =$ ....

b. $\lim_{x\to0^-} f(x) =$ ....

c. $\lim_{x\to0^+} f(x) =$ ....

d. $\lim f(x) =$

e. $\lim_{x\to1^+} f(x) =$ ....

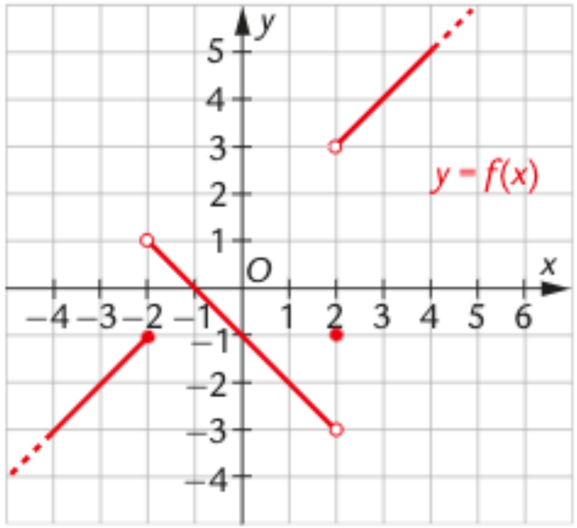
f. $f(1) =$ ....

g. $\lim_{x\to+\infty} f(x) =$ ....

Approccio numerico al concetto di limite

Completa le uguaglianze, deducendo dal grafico il valore dei limiti indicati, se esistono.

17



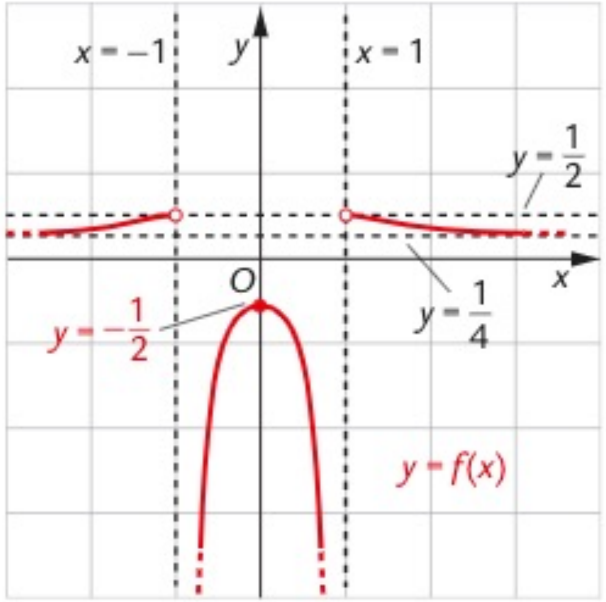
a. $\lim_{x\to-2^-} f(x) =$ .... $\lim_{x\to2^+} f(x) =$ ....

b. $\lim_{x\to-2^+} f(x) =$ .... $\lim_{x\to2} f(x) =$ ....

c. $\lim_{x\to-2} f(x) =$ .... $\lim_{x\to0} f(x) =$ ....

d. $\lim_{x\to2^-} f(x) =$ .... $\lim_{x\to-\infty} f(x) =$ ....

18



a. $\lim_{x\to-\infty} f(x) =$ .... $\lim_{x\to+\infty} f(x) =$ ....

b. $\lim_{x\to-1^-} f(x) =$ .... $\lim_{x\to-1^+} f(x) =$ ....

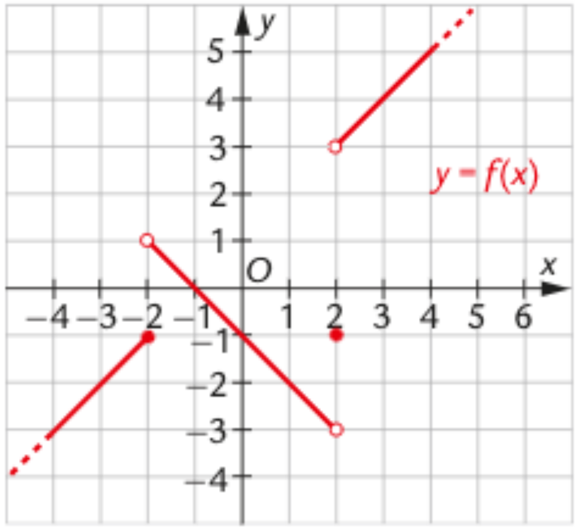
c. $\lim_{x\to0} f(x) =$ .... $\lim_{x\to1} f(x) =$ ....

d. $\lim_{x\to1^-} f(x) =$ .... $\lim_{x\to1^+} f(x) =$ ....

Approccio numerico al concetto di limite

Completa le uguaglianze, deducendo dal grafico il valore dei limiti indicati, se esistono.

17



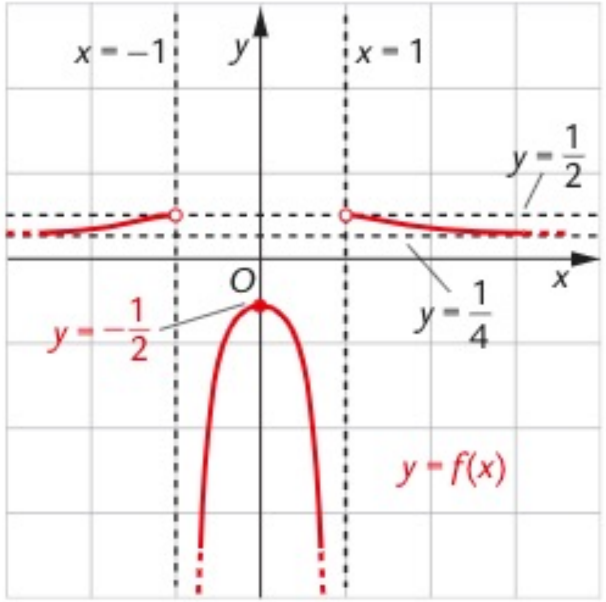
a. $\lim_{x\to -2^-} f(x) =$ .... $\lim_{x\to 2^+} f(x) =$ ....

b. $\lim_{x\to -2^+} f(x) =$ .... $\lim_{x\to 2} f(x) =$ ....

c. $\lim_{x\to -2} f(x) =$ .... $\lim_{x\to 0} f(x) =$ ....

d. $\lim_{x\to 2^-} f(x) =$ .... $\lim_{x\to -\infty} f(x) =$ ....

18



a. $\lim_{x\to -\infty} f(x) =$ .... $\lim_{x\to +\infty} f(x) =$ ....

b. $\lim_{x\to -1^-} f(x) =$ .... $\lim_{x\to -1^+} f(x) =$ ....

c. $\lim_{x\to 0} f(x) =$ .... $\lim_{x\to 1} f(x) =$ ....

d. $\lim_{x\to 1^-} f(x) =$ .... $\lim_{x\to 1^+} f(x) =$ ....