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$D: (-\infty; +\infty)$

$$\lim_{x \to +\infty} (1+e^{2x}) = +\infty$$

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$+\infty$ è pt. di acc. per D

$\forall M$ grande a piacere $\exists$ in corrispondenza di M un $I_{(+\infty)} / \forall x \in I_{(+\infty)}$ si ha

$$1+e^{2x} > M$$

$$e^{2x} > M-1$$

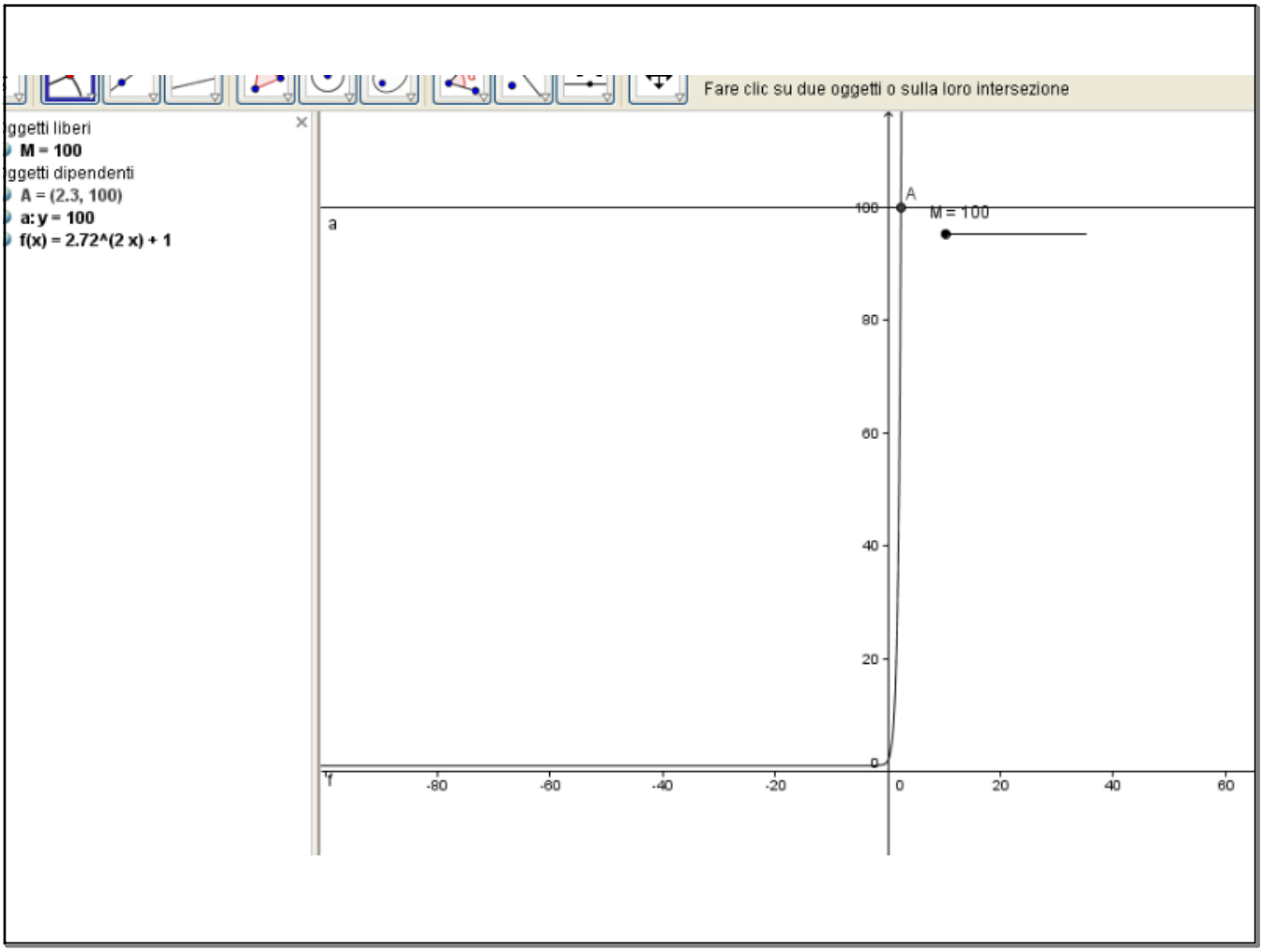
$$\log e^{2x} > \log(M-1)$$

$$2x \log e > \log(M-1)$$

$$2x > \log(M-1)$$

$$x > \frac{1}{2}\log(M-1)$$

$$I_{(+\infty)} = \left(\frac{1}{2}\log(M-1); +\infty\right)$$


Fare clic su due oggetti o sulla loro intersezione
ggetti liberi
M = 100
ggetti dipendenti
A = (2.3, 100)
a: y = 100
f(x) = 2.72^(2 x) + 1
a
A
M = 100
100
80
60
40
20
0
f
-80
-60
-40
-20
0
20
40
60

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$\lim_{x\to\infty} \log \frac{1}{1+x^2} = -\infty$

D: $\frac{1}{1+x^2} > 0 \quad \forall x \in \mathbb{R}$

D: $(-\infty; +\infty)$

∞ è pt di acc per D

$\forall M$ grande a piacere $\exists$ in corrispondenza di M un $I_{(\infty)} / \forall_{(x)} \in I_{(\infty)}$ si ha

$$\left(\left| \log \frac{1}{1+x^2} \right| > M \right)$$

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$$\log \frac{1}{1+x^2} < -M \quad \cup \quad \cancel{\log 1+x^2 > M}$$

$$-\log 1+x^2 < -M$$

$$\log 1+x^2 > M$$

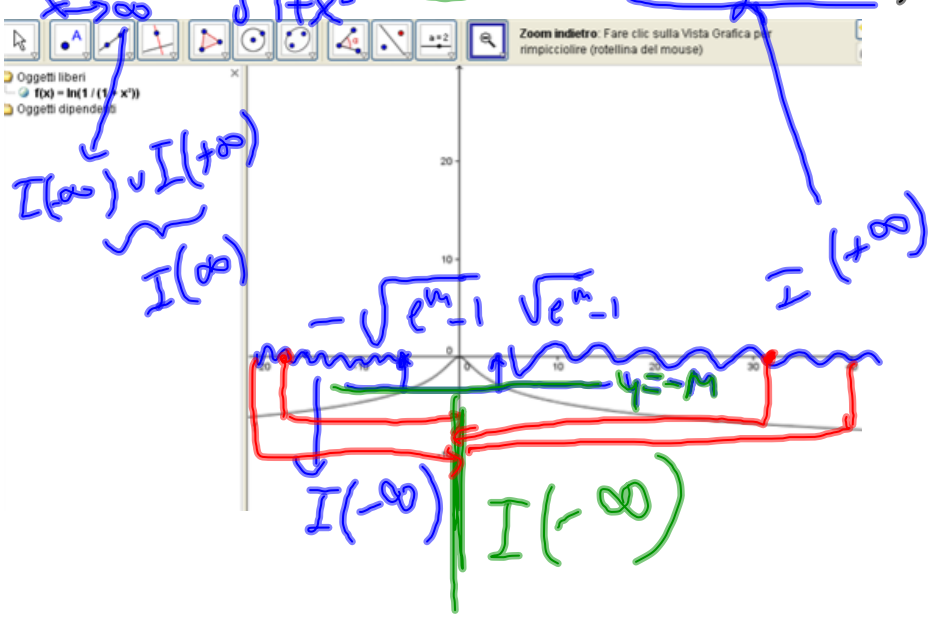
$$\cancel{\log} 1+x^2 > \cancel{\log} e^M$$

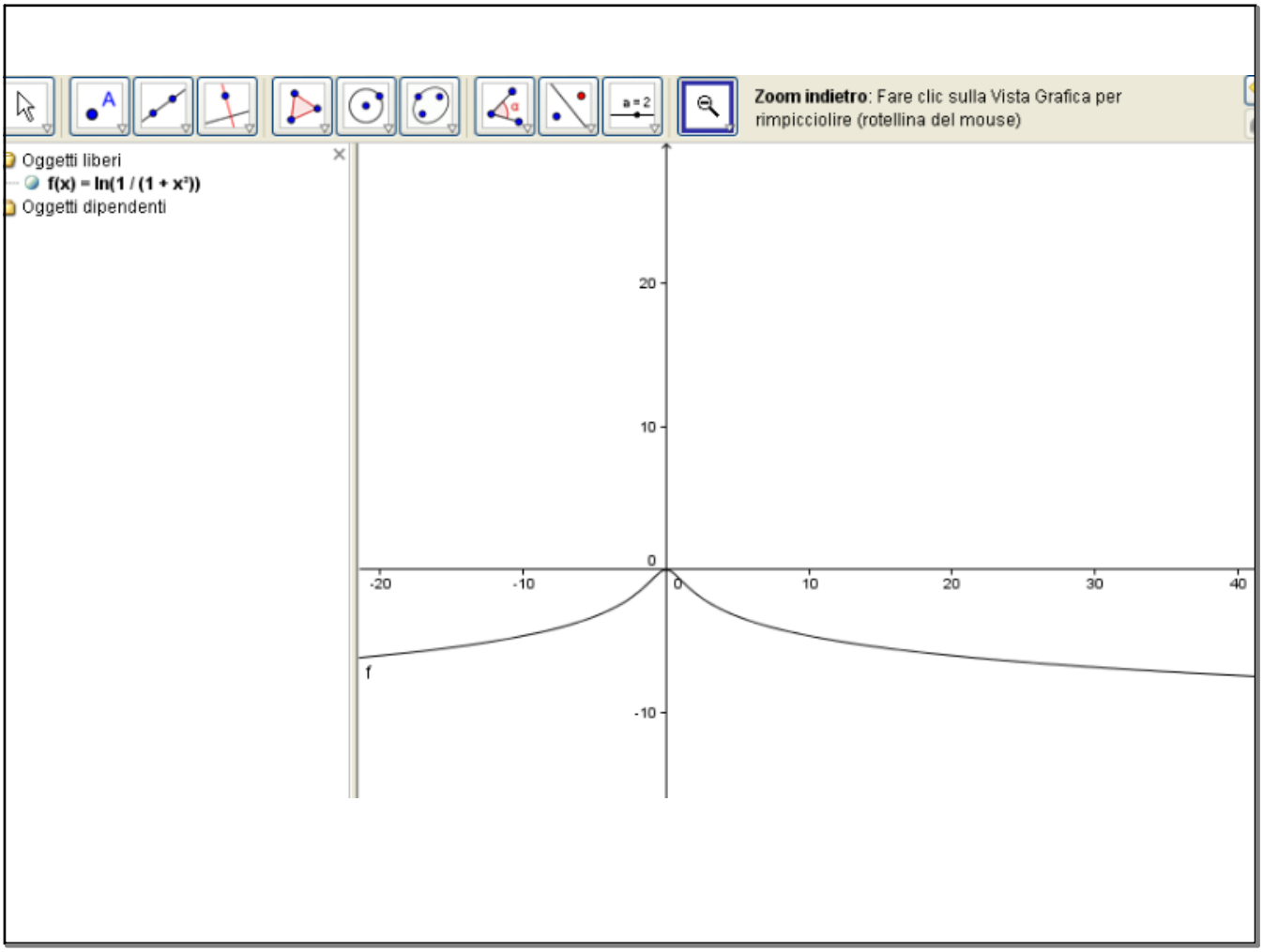
$$x^2 > e^M - 1$$

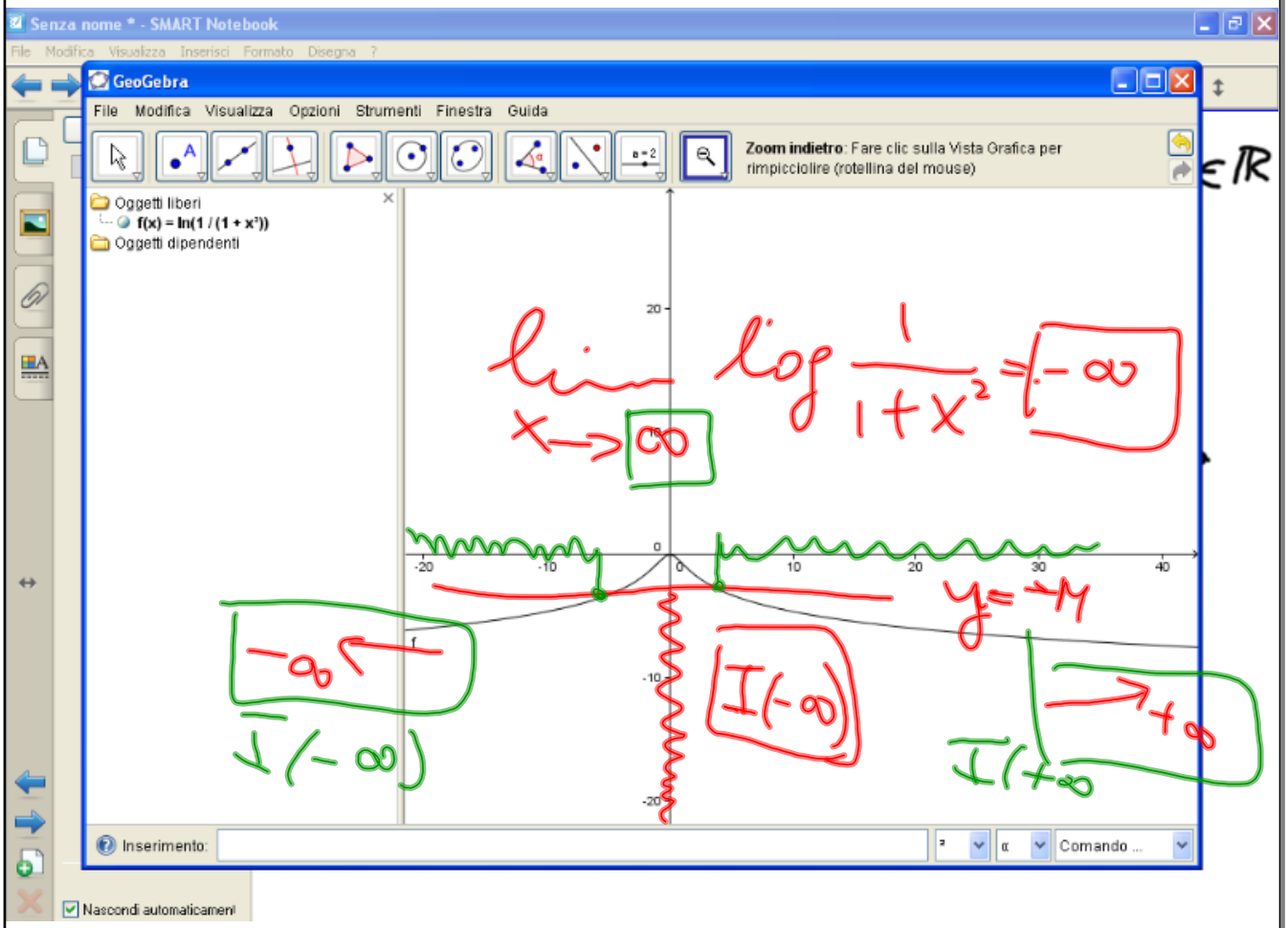
$$x < -\sqrt{e^M-1} \quad \cup \quad x > \sqrt{e^M-1}$$

$$I_{(\infty)} = \left(-\infty; -\sqrt{e^M-1}\right) \cup \left(\sqrt{e^M-1}; +\infty\right)$$

$\lim_{x\to\infty} \log \frac{1}{1+x^2} = -\infty$




Zoom indietro: Fare clic sulla Vista Grafica per rimpicciolire (rotellina del mouse)
Oggetti liberi
f(x) = ln(1 / (1 + x²))
Oggetti dipendenti
20
10
0
-10
-20
-10
0
10
20
30
40
f


Senza nome * - SMART Notebook
GeoGebra
File Modifica Visualizza Opzioni Strumenti Finestra Guida
Zoom indietro: Fare clic sulla Vista Grafica per rimpicciolire (rotellina del mouse)
Oggetti liberi
f(x) = ln(1 / (1 + x²))
Oggetti dipendenti
Inserimento:
Comando ...
Nascondi automaticamente
$\lim_{x \to \infty} \log \frac{1}{1+x^2} = -\infty$
$y = -M$
$-\infty$
$I(-\infty)$
$I(-\infty)$
$+\infty$
$I(+\infty)$

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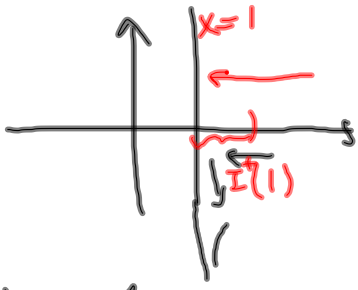
$$\lim_{x\to 1^+} \frac{1}{3-3^x} = -\infty$$



$D: 3-3^x \neq 0$

$-3^x \neq -3$

$3^x \neq 3$

$x \neq 1$

$$\lim_{x\to 1^+} \frac{1}{3-3^x} = -\infty$$

1 è pt di acc per D

$y=3^x$ $D: (-\infty;1)\cup(1;+\infty)$

$\forall M$ grande a piacere $\exists$ in corrispondenza un $I_{(1^+)} \mid \forall x \in I_{(1^+)} - \{1\}$ si ha

$$\left(\left| \frac{1}{3-3^x} \right| > M \right)$$

per $x>1$ $\frac{1}{3^x-3} > M$

$\frac{1}{3-3^x} < -M$

$\frac{1}{3-3^x} > M$

$$\begin{cases} \frac{1}{x>3-3^x} < -M \\ x>1 \end{cases}$$

$$\begin{cases} 3^x > -3 < \frac{1}{M} \end{cases}$$

$$3^x < \frac{1}{M} + 3$$

$$3^x < \frac{1+3M}{M}$$

$$\log_3 3^x < \log_3 \frac{1+3M}{M}$$

$$x \underbrace{\log_3 3}_{1} < \log_3 \frac{1+3M}{M}$$

$$1 < x < \log_3 \frac{1+3M}{M} = I^+(1)$$

$$\log_3 \left(\frac{1}{M} + \frac{3M}{M}\right)$$

$$\log_3 \left(3 + \frac{1}{M}\right)$$

$$I_{(1^+)} = \left(1; \log_3\left(3+\frac{1}{M}\right)\right)$$

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