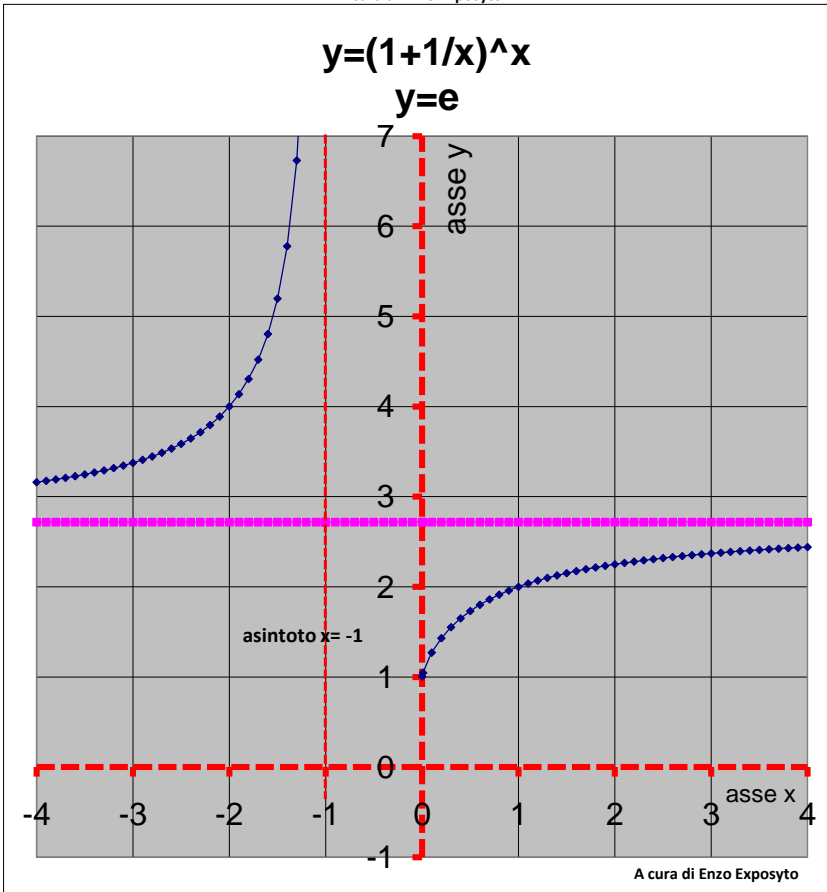


$$y = (1 + 1/x)^x$$

Funzione Neperiana

A cura di Enzo Exposito

x	$y = (1 + 1/x)^x$	$y = e$
-100.000,000	2,71830	2,71828
-10.000,000	2,71842	2,71828
-1.000,000	2,71964	2,71828
-100,000	2,73200	2,71828
-4,000	3,16049	2,71828
-3,900	3,17541	2,71828
-3,800	3,19137	2,71828
-3,700	3,20849	2,71828
-3,600	3,22690	2,71828
-3,500	3,24674	2,71828
-3,400	3,26821	2,71828
-3,300	3,29150	2,71828
-3,200	3,31686	2,71828
-3,100	3,34458	2,71828
-3,000	3,37500	2,71828
-2,900	3,40854	2,71828
-2,800	3,44572	2,71828
-2,700	3,48715	2,71828
-2,600	3,53361	2,71828
-2,500	3,58610	2,71828
-2,400	3,64586	2,71828
-2,300	3,71453	2,71828
-2,200	3,79430	2,71828
-2,100	3,88809	2,71828
-2,000	4,00000	2,71828
-1,900	4,13591	2,71828
-1,800	4,30456	2,71828
-1,700	4,51956	2,71828
-1,600	4,80341	2,71828
-1,500	5,19615	2,71828
-1,400	5,77691	2,71828
-1,300	6,72773	2,71828
-1,200	8,58581	2,71828
-1,100	13,98080	2,71828
-1,010	105,77051	2,71828
-1,001	1007,93961	2,71828
-1,000		2,71828
-0,900		2,71828
-0,800		2,71828
-0,700		2,71828
-0,600		2,71828
-0,500		2,71828
-0,400		2,71828
-0,300		2,71828
-0,200		2,71828
-0,100		2,71828
0,000		2,71828
0,001	1,00693	2,71828
0,010	1,04723	2,71828
0,100	1,27098	2,71828
0,200	1,43097	2,71828
0,300	1,55255	2,71828
0,400	1,65054	2,71828
0,500	1,73205	2,71828
0,600	1,80128	2,71828
0,700	1,86100	2,71828
0,800	1,91314	2,71828
0,900	1,95912	2,71828
1,000	2,00000	2,71828
1,100	2,03662	2,71828
1,200	2,06962	2,71828
1,300	2,09952	2,71828
1,400	2,12675	2,71828
1,500	2,15166	2,71828
1,600	2,17453	2,71828
1,700	2,19561	2,71828
1,800	2,21510	2,71828
1,900	2,23318	2,71828
2,000	2,25000	2,71828
2,100	2,26568	2,71828
2,200	2,28034	2,71828
2,300	2,29408	2,71828
2,400	2,30697	2,71828
2,500	2,31910	2,71828
2,600	2,33054	2,71828
2,700	2,34133	2,71828
2,800	2,35154	2,71828
2,900	2,36120	2,71828
3,000	2,37037	2,71828
3,100	2,37908	2,71828
3,200	2,38736	2,71828
3,300	2,39524	2,71828
3,400	2,40276	2,71828
3,500	2,40994	2,71828
3,600	2,41679	2,71828
3,700	2,42335	2,71828
3,800	2,42962	2,71828
3,900	2,43564	2,71828
4,000	2,44141	2,71828
100,000	2,70481	2,71828
1.000,000	2,71692	2,71828
10.000,000	2,71815	2,71828
100.000,000	2,71827	2,71828



A cura di Enzo Exposito

Dominio:

1) La funzione $y_1 = 1/x$, all'interno delle parentesi, ha valori se $x \neq 0$;

quindi, **deve essere $x \neq 0$**

2) La funzione $y = (1 + 1/x)^x = \text{base}^{\text{esponente}}$ ha valori solo se $y \neq 0^{\text{esponente negativo}}$

Se fosse $x = -1$ si avrebbe $y = (1 - 1/1)^{-1} = 0^{-1}$;

quindi, **deve essere $x \neq -1$**

3) La funzione $y = (1 + 1/x)^x = \text{base}^{\text{esponente}}$ non ha valori reali **continui** con base negativa ed esponente maggiore di -1 e minore di 0

Ad esempio, con $x = -0.5$, si ha $y = (1 - 1/0.5)^{-0.5} = (-1)^{(-1/2)} = 1/\sqrt{-1}$ che non è un valore reale

E' il caso di rilevare pure che, con $x = -1/3$, si ha $y = (1 - 1/3)^{(-1/3)} = (-2)^{(-1/3)} = 1/\sqrt[3]{-2} = -0,7937...$ (vedi nota)

4) Conclusioni: **deve essere $x \neq 0$**

deve essere $x \neq -1$

$x \notin]-1; 0[$

Dominio: $D = \mathbb{R} -]-1; 0[$

Asintoto verticale: $x = -1$

nota

-0,333 -0,7937005 2,71828