

*c is the base
 → # w/ exp.

EXPONENTIAL FUNCTION

$$y = c^x \quad c > 1$$

growth

Domain: $(-\infty, \infty)$

Range: $(0, \infty)$

Continuous or
Discontinuous

growth OR decay

Shape:

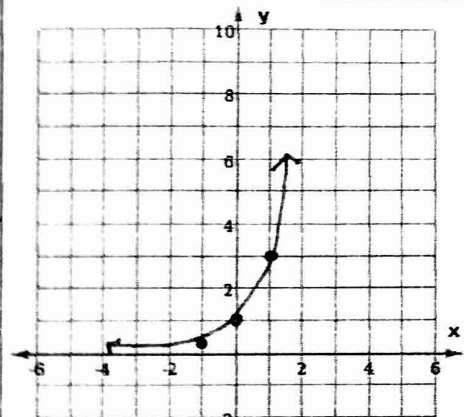


Asymptote(s): line that
graph gets close to
but doesn't touch
 $y = 0$

Interval(s) of Increase: $(-\infty, \infty)$

Interval(s) of Decrease: none

End Behavior: As $x \rightarrow -\infty$ As $x \rightarrow \infty$
 $f(x) \rightarrow 0$ $f(x) \rightarrow \infty$



ex: $y = 3^x$

x	f(x)
-1	1/3
0	1
1	3

x-intercept:
none
y-intercept:
(0, 1)

base: 3

Exponential FUNCTION

$$y = c^x \quad 0 < c < 1$$

decay

Domain: $(-\infty, \infty)$

Range: $(0, \infty)$

Continuous or
Discontinuous

growth OR decay

Shape:



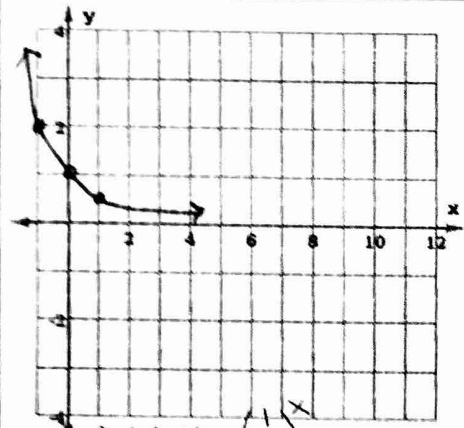
Asymptote(s):

$$y = 0$$

Interval(s) of Increase: none

Interval(s) of Decrease: $(-\infty, \infty)$

End Behavior: As $x \rightarrow -\infty$ As $x \rightarrow \infty$
 $f(x) \rightarrow \infty$ $f(x) \rightarrow 0$



ex: $y = (\frac{1}{2})^x$

x	f(x)
-1	2
0	1
1	1/2

x-intercept:
y-intercept:

base: 1/2