Graphing and Analyzing Exponential Functions

1. $f(x) = 3^x$ Growth or Decay? (>1)

Yint: 1 Asymp: $y=0$

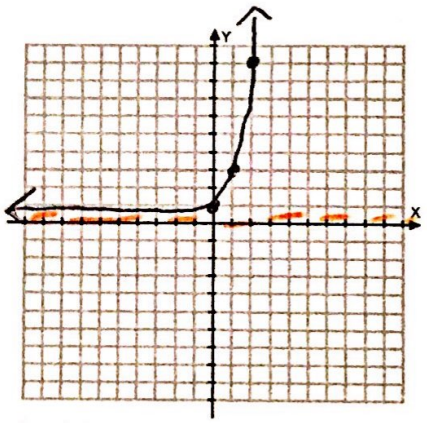
D: $(-\infty, \infty)$ R: $(0, \infty)$

EB: $x \xrightarrow{R} +\infty, f(x) \to \infty$

$x \xrightarrow{L} -\infty, f(x) \to 0$

table

x	y
0	1 ← y-int
1	3
2	9
3	27



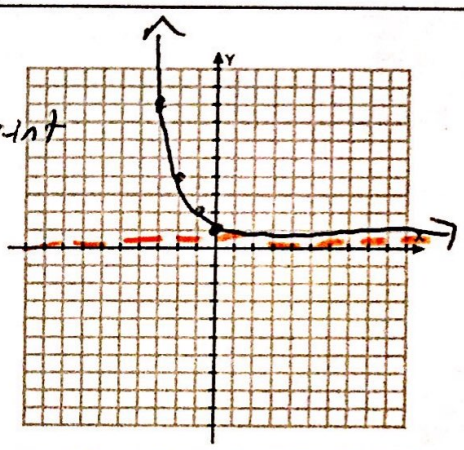
2. $f(x) = (2)^{-x}$ Growth or Decay? ($b>1$)

Yint: 1 Asymp: $y=0$

D: $(-\infty, \infty)$ R: $(0, \infty)$

EB: $x \xrightarrow{R} +\infty, f(x) \to 0$

$x \xrightarrow{L} -\infty, f(x) \to \infty$



x	y
0	1
-1	2
-2	4
-3	8
-4	16

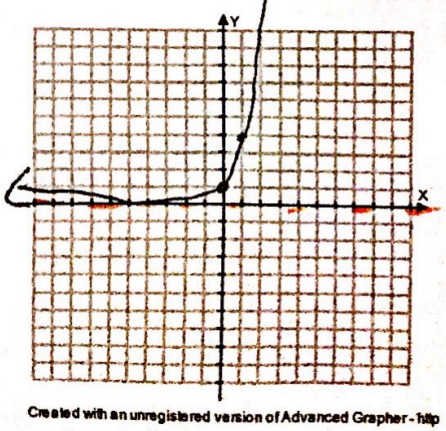
3. $f(x) = 4^x$ Growth or Decay? ($b>1$)

Yint: 1 Asymp: $y=0$

D: $(-\infty, \infty)$ R: $(0, \infty)$

EB: $x \xrightarrow{R} +\infty, f(x) \to \infty$

$x \xrightarrow{L} -\infty, f(x) \to 0$



x	y
0	1
1	4
2	16

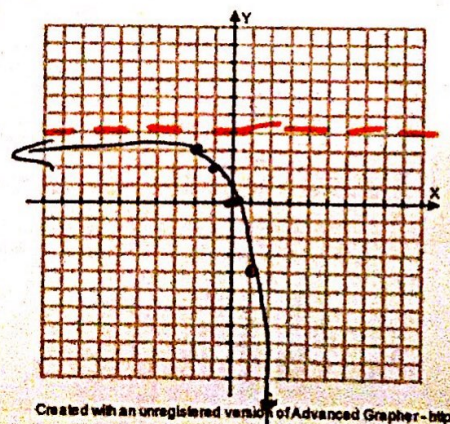
4. $f(x) = -4(2^x) + 4$ Growth or Decay? ($b>1$)

Yint: 0 Asymp: $y=4$

D: $(-\infty, \infty)$ R: $(-\infty, 4)$

EB: $x \xrightarrow{R} +\infty, f(x) \to -\infty$

$x \xrightarrow{L} -\infty, f(x) \to 4$



x	y
-2	3
-1	2
0	0
1	-4
2	-12