Honors Algebra II
Characteristics of Exponentials Practice

Name: _____
Date: _____ Period: _____

Characteristics of Exponential Functions

1. $f(x) = (\frac{1}{3})^{x-2} - 4$

Domain: $(-\infty, \infty)$ Range: $(-4, \infty)$

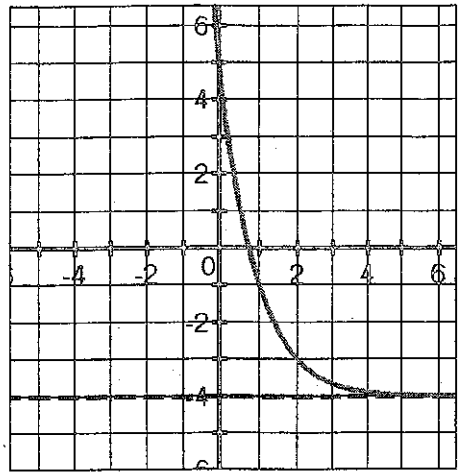
Asymptote: $y = -4$ Extrema: none

Function Type: decay b $<$ 1

Interval of decrease: $(-\infty, \infty)$

X-Intercept: $(.8, 0)$ Y-Intercept: $(0, 5)$

$(0,5)$ $(2,-3)$ Rate of change on the interval $0 \leq x \leq 2$: -4



2. $f(x) = -(\frac{1}{2})^{x+1} - 1$

Domain: $(-\infty, \infty)$ Range: $(-\infty, -1)$

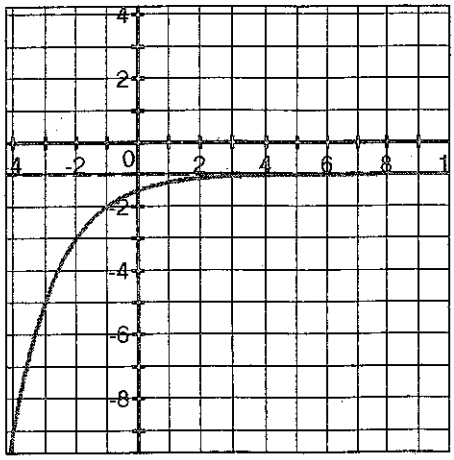
Asymptote: $y = -1$ Extrema: none

Function Type: decay b $<$ 1

Interval of increase: $(-\infty, \infty)$

X-Intercept: none Y-Intercept: $(0, -1.5)$

$(-4,-9)$ $(-1,-2)$ Rate of change on the interval $-4 \leq x \leq -1$: $\frac{7}{3}$



3. $f(x) = \frac{1}{4}(2)^{x+3} - 6$

Domain: $(-\infty, \infty)$ Range: $(-6, \infty)$

Asymptote: $y = -6$ Extrema: none

Function Type: growth b $>$ 1

Interval of increase: $(-\infty, \infty)$

X-Intercept: $(1.6, 0)$ Y-Intercept: $(0, -4)$

Rate of change on the interval $-2 \leq x \leq 2$: $\frac{15}{8}$

$(-2, -5.5)$ $(2, 2)$ $\frac{7.5}{4}$