

Name _____

Date _____

1. $y = -2^{x+1} + 1$

Transformations: reflect x-axis, left 1, up 1

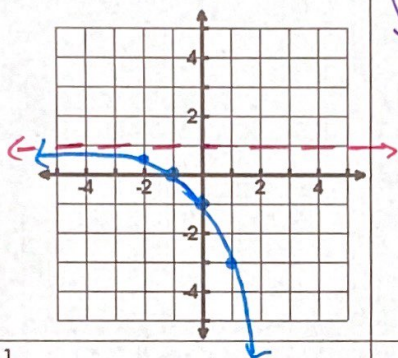
Domain: $(-\infty, \infty)$ Range: $(-\infty, 1)$

Asymptote: $y = 1$ Inc or Dec $(-\infty, \infty)$

X-Int: $(-1, 0)$ Y-Int: $(0, -1)$

End Behavior: $x \rightarrow -\infty, f(x) \rightarrow 1$
 $x \rightarrow \infty, f(x) \rightarrow -\infty$

$0 = -2^{x+1} + 1$
 $-1 = -2^{x+1}$
 $\log_2 1 = \log_2 2^{x+1}$
 $0 = x+1$
 $-1 = x$



2. $y = -\log_3(x+1) - 2$

Transformations: reflect x-axis, left 1, down 2

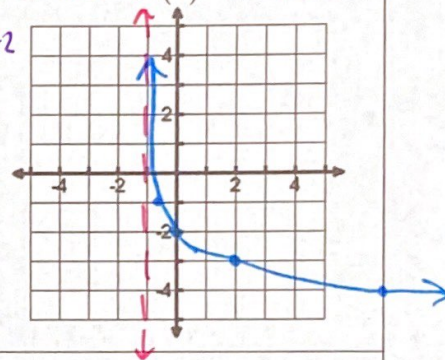
Domain: $(-1, \infty)$ Range: $(-\infty, \infty)$

Asymptote: $x = -1$ Inc or Dec $(-1, \infty)$

X-Int: $(-8/9, 0)$ Y-Int: $(0, -2)$

End Behavior: $x \rightarrow -1, f(x) \rightarrow \infty$
 $x \rightarrow \infty, f(x) \rightarrow -\infty$

$0 = -\log_3(x+1) - 2$
 $2 = -\log_3(x+1)$
 $-2 = \log_3(x+1)$
 $3^{-2} = 3^{\log_3(x+1)}$
 $1/9 = x+1$
 $-8/9 = x$



3. $y = \log_4(x-2) - 1$

Transformations: right 2, down 1

Domain: $(2, \infty)$ Range: $(-\infty, \infty)$

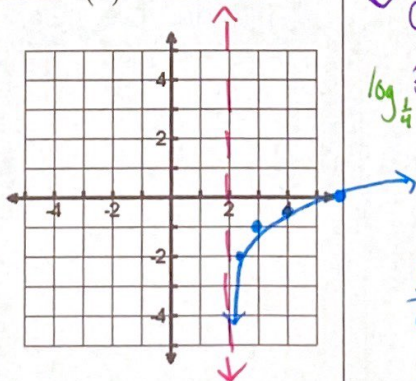
Asymptote: $x = 2$ Inc or Dec $(2, \infty)$

X-Int: $(6, 0)$ Y-Int: none

End Behavior: $x \rightarrow 2, f(x) \rightarrow -\infty$
 $x \rightarrow \infty, f(x) \rightarrow \infty$

right 2
down 1

x	y
$1/4 + 2$	$-1 - 1$
$1 + 2$	$0 - 1$
$4 + 2$	$1 - 1$



4. $y = \left(\frac{1}{4}\right)^{x-1} - 3$

Transformations: right 1, down 3

Domain: $(-\infty, \infty)$ Range: $(-3, \infty)$

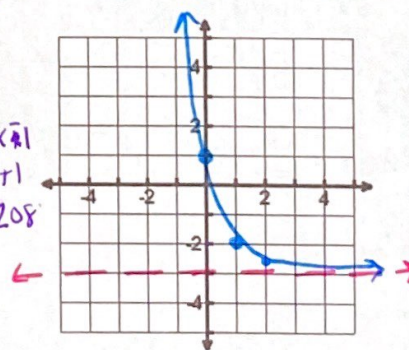
Asymptote: $y = -3$ Inc or Dec $(-\infty, \infty)$

X-Int: $(.208, 0)$ Y-Int: $(0, 1)$

End Behavior: $x \rightarrow -\infty, f(x) \rightarrow \infty$
 $x \rightarrow \infty, f(x) \rightarrow -3$

$0 = \frac{1}{4}^{x-1} - 3$
 $\log_{1/4} 3 = \log_{1/4} \frac{1}{4}^{x-1}$
 $\log_{.25} 3 = x-1$
 $x \approx .208$

x	y
0	1
1	-2
2	-2.75



5. $y = \ln(x-2)$

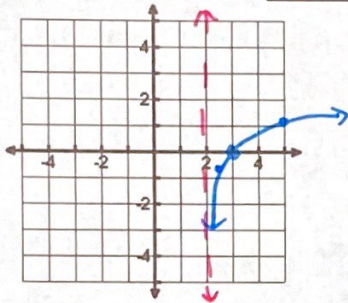
Transformations: right 2

Domain: $(2, \infty)$ Range: $(-\infty, \infty)$

Asymptote: $x=2$ (Inc or Dec $(2, \infty)$)

X-Int: $(3, 0)$ Y-Int: none

End Behavior: $x \rightarrow 2$, $f(x) \rightarrow -\infty$
 $x \rightarrow \infty$, $f(x) \rightarrow \infty$



6. $y = e^{x+1} - 3$

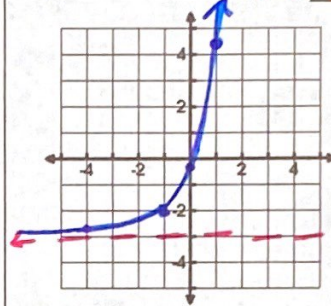
Transformations: left 1, down 3

Domain: $(-\infty, \infty)$ Range: $(-3, \infty)$

Asymptote: $y=-3$ (Inc or Dec $(-\infty, \infty)$)

X-Int: $(.099, 0)$ Y-Int: $(0, -2.8)$

End Behavior: $x \rightarrow -\infty$, $f(x) \rightarrow -3$
 $x \rightarrow \infty$, $f(x) \rightarrow \infty$



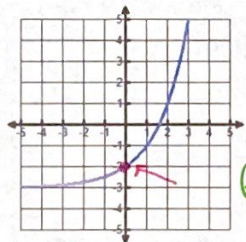
X-int
 $0 = e^{x+1} - 3$
 $3 = e^{x+1}$
 $\ln 3 = \ln e^{x+1}$
 $\ln 3 = x+1$
 $(\ln 3) - 1 = x$
 $x \approx .099$

7. A) Does the table or graph have a larger y-int?

Table

B) Determine which is growth and which is decay.

X	F(x)
-3	6
-2	4
-1	3
0	2.5
1	2.25



Decay

Growth

8. Which table is a log function and which table is an exponential function?

X	F(x)
-0.5	1.731
0	3
1	9
2	27

Exponential

X	F(x)
-0.5	-0.63
0	0
2	1
8	2

Log

9. A) Is the table an Exp or Log Function?

Log

B) What is type of asymptote does this have?

vertical $x=$

C) What is the equation of the asymptote?

X	F(x)
0.5	-0.63
1	0
3	1
9	2

$x=0$

10. A) Is the table Exponential or Logarithmic?

Exp.

B) What is type of asymptote does this table have?

horizontal $y=$

C) What is the equation of the asymptote?

X	F(x)
-3	-0.875
-2	-0.75
-1	-0.5
0	0
1	1
2	3

$y=-1$