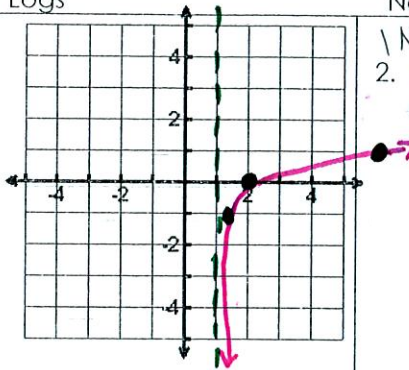


INC  
1.  $y = \log_5(x-1)$

X	Y
$1\frac{1}{5}$	-1
2	0
6	1



Transformations Right 1

State 3 points on Graph  $(1\frac{1}{5}, -1)$   $(2, 0)$   $(6, 1)$

Domain  $(1, \infty)$

Range  $\mathbb{R}$

Asymptote  $x = 1$

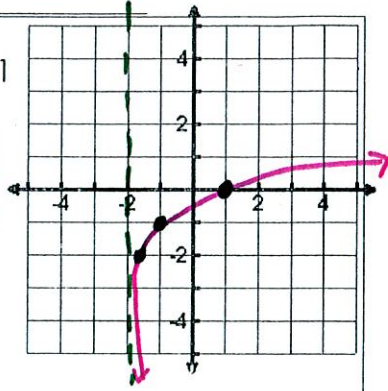
X-intercept  $(2, 0)$  Y-intercept NONE

Increasing  $(-\infty, \infty)$  Decreasing NONE

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

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

X	Y
-2	-1
$-1\frac{2}{3}$	-2
-1	-1
1	0



Transformations left + 2, down 1

State 3 points on Graph  $(-1\frac{2}{3}, -2)$   $(-1, -1)$   $(1, 0)$

Domain  $(-2, \infty)$  y-int

Range  $\mathbb{R}$   $y = \log_3(\text{or } 2) - 1$

Asymptote  $x = -2$   $y = \log_3 2 + 1$

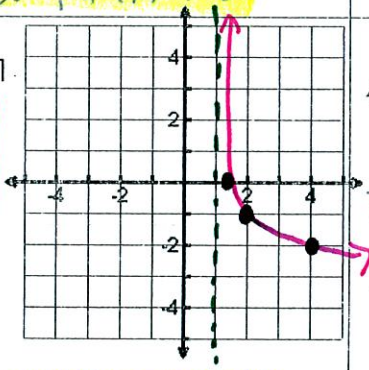
X-intercept  $(1, 0)$  Y-intercept  $(0, -1.369)$

Increasing  $(-\infty, \infty)$  Decreasing NONE

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

DEC  
3.  $y = -\log_3(x-1) - 1$

X	Y
$1\frac{1}{3}$	0
2	-1
4	-2



Transformations reflect over x-axis,  
right + 1, down 1

State 3 points on Graph  $(1\frac{1}{3}, 0)$   $(2, -1)$   $(4, -2)$

Domain  $(1, \infty)$

Range  $\mathbb{R}$

Asymptote  $x = 1$

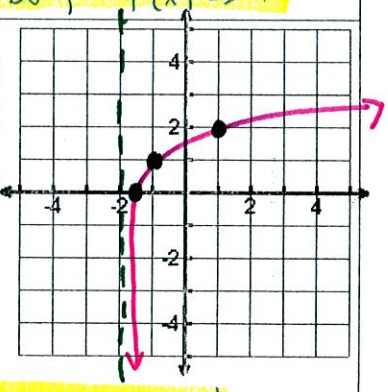
X-intercept  $(1\frac{1}{3}, 0)$  Y-intercept NONE

Increasing NONE Decreasing  $(-\infty, \infty)$

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

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

X	Y
-2	1
$-1\frac{2}{3}$	0
-1	1
1	2



Transformations left + 2, up 1

State 3 points on Graph  $(-1\frac{2}{3}, 0)$   $(-1, 1)$   $(1, 2)$

Domain  $(-2, \infty)$  y-int

Range  $\mathbb{R}$   $y = \log_3(\text{or } 2) + 1$

Asymptote  $x = -2$   $y = \log_3 2 + 1$

X-intercept  $(-1\frac{2}{3}, 0)$  Y-intercept  $(0, 1.631)$

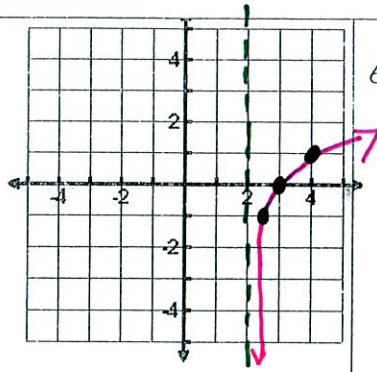
Increasing  $(-\infty, \infty)$  Decreasing NONE

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



INC  
5.  $y = \log_2(x-2)$

x	y
$2\frac{1}{2}$	-1
3	0
4	1



Transformations right + 2

State 3 points on Graph  $(2\frac{1}{2}, -1)$   $(3, 0)$   $(4, 1)$

Domain  $(2, \infty)$

Range  $\mathbb{R}$

Asymptote  $x = 2$

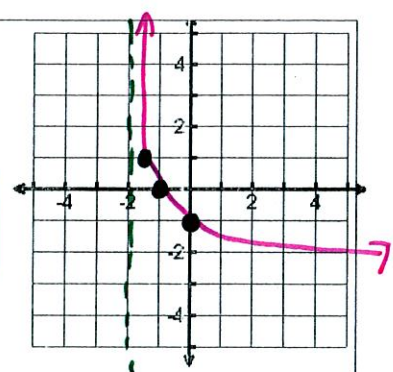
X-intercept  $(3, 0)$  Y-intercept NONE

Increasing  $(-\infty, \infty)$  Decreasing NONE

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

DEC  
6.  $y = \log_{\frac{1}{2}}(x+2)$

x	y
-2	-1
-1	0
$-1\frac{1}{2}$	1



Transformations left + 2

State 3 points on Graph  $(0, -1)$   $(-1, 0)$   $(-1\frac{1}{2}, 1)$

Domain  $(-2, \infty)$

Range  $\mathbb{R}$

Asymptote  $x = -2$

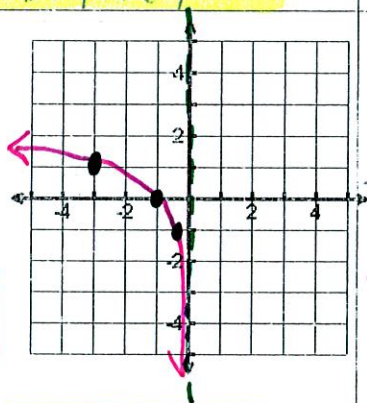
X-intercept  $(-1, 0)$  Y-intercept  $(0, -1)$

Increasing NONE Decreasing  $(-\infty, \infty)$

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

DEC  
7.  $y = \log_3(-x)$

x	y
$-\frac{1}{3}$	-1
-1	0
-3	1



Transformations reflect over y-axis

State 3 points on Graph  $(-\frac{1}{3}, -1)$   $(-1, 0)$   $(-3, 1)$

Domain  $(-\infty, 0)$

Range  $\mathbb{R}$

Asymptote  $x = 0$

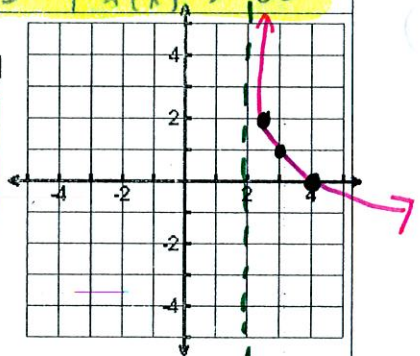
X-intercept  $(-1, 0)$  Y-intercept NONE

Increasing NONE Decreasing  $(-\infty, \infty)$

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

DEC  
8.  $y = -\log_2(x-2) + 1$

x	y
$2\frac{1}{2}$	2
3	1
4	0



Transformations reflect over x, right + 2, down

State 3 points on Graph  $(2\frac{1}{2}, 2)$   $(3, 1)$   $(4, 0)$

Domain  $(2, \infty)$

Range  $\mathbb{R}$

Asymptote  $x = 2$

X-intercept  $(4, 0)$  Y-intercept NONE

Increasing NONE Decreasing  $(-\infty, \infty)$

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