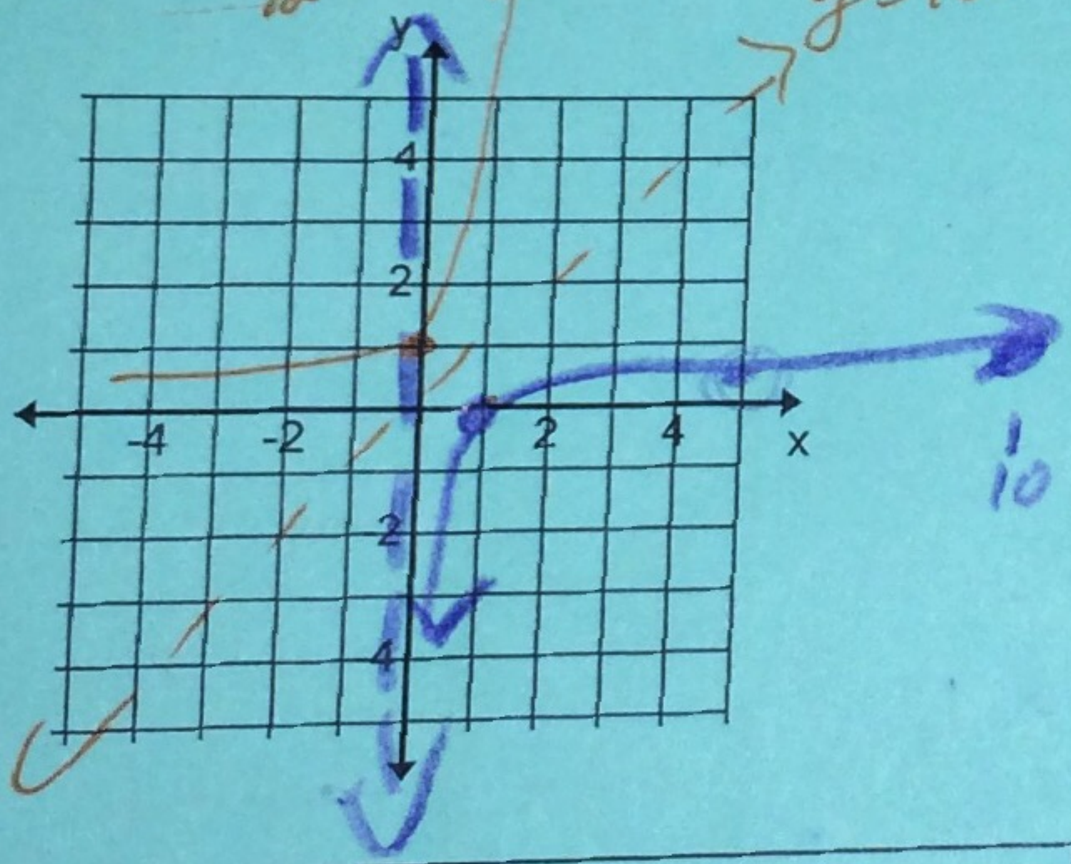
TRANSFORMATION OF LOGARITHMIC GRAPHS

1. $y = \log x$

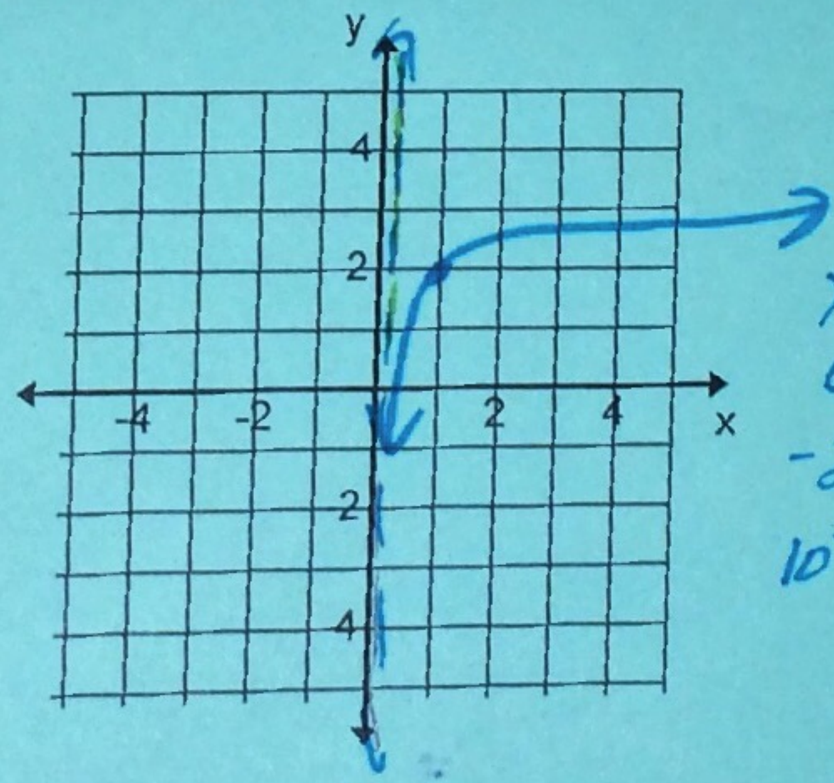


x-int: 1 y-int: None

Domain: (0,∞) Range: ℝ

Asymptote: x=0

2. $y = \log x + 2$



x:
0 = log x + 2
-2 = log₁₀ x
10^-2 = x

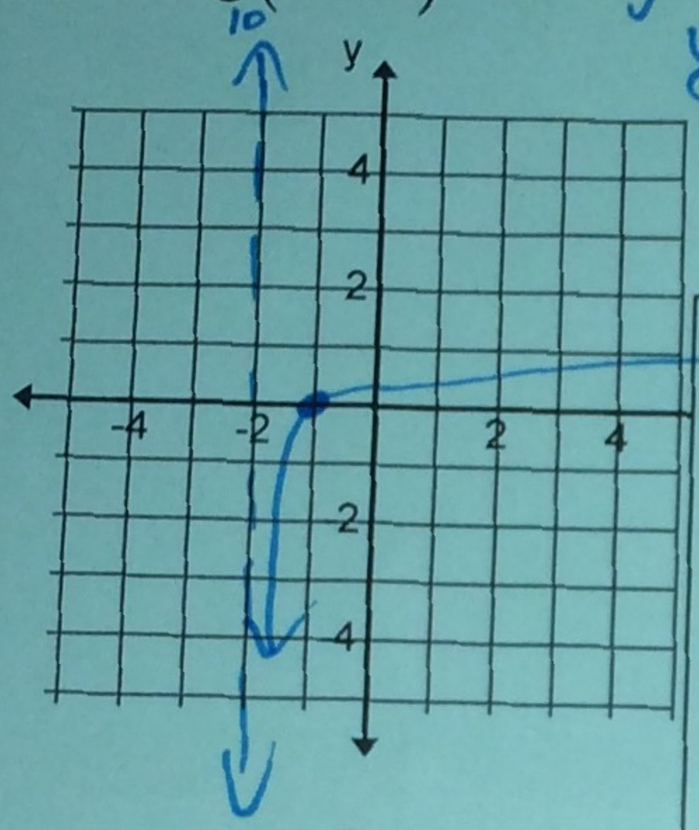
x-int: 1/100 y-int: None

Domain: (0,∞) Range: ℝ

Asymptote: x=0

3. $y = \log(x+2)$

y-int
$y = \log 2$



x-int: -1

y-int: $\log 2$ .301

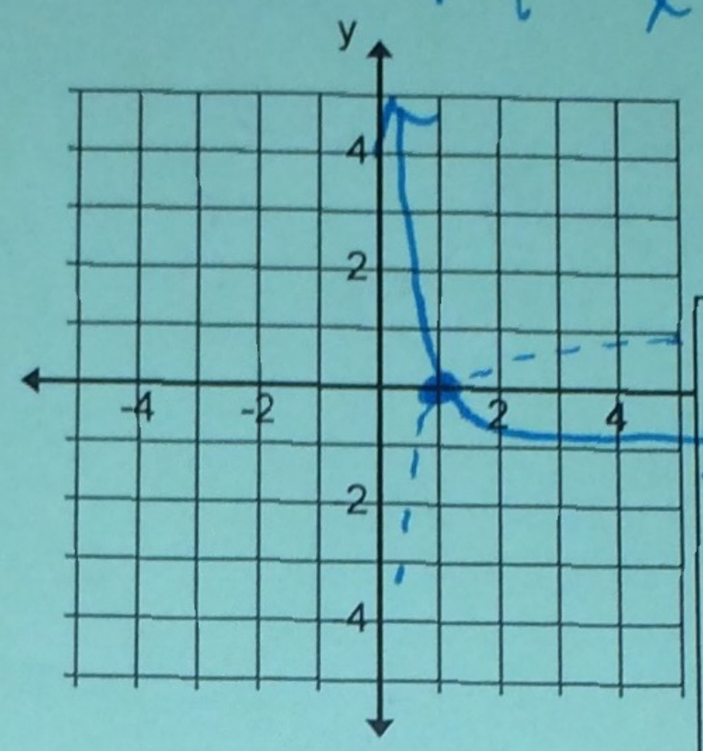
Domain: $(-2, \infty)$

Range: $\mathbb{R}$

Asym: $x = -2$

4. $y = -\log x$

Refl. across x-axis



x-int: 1

y-int: None

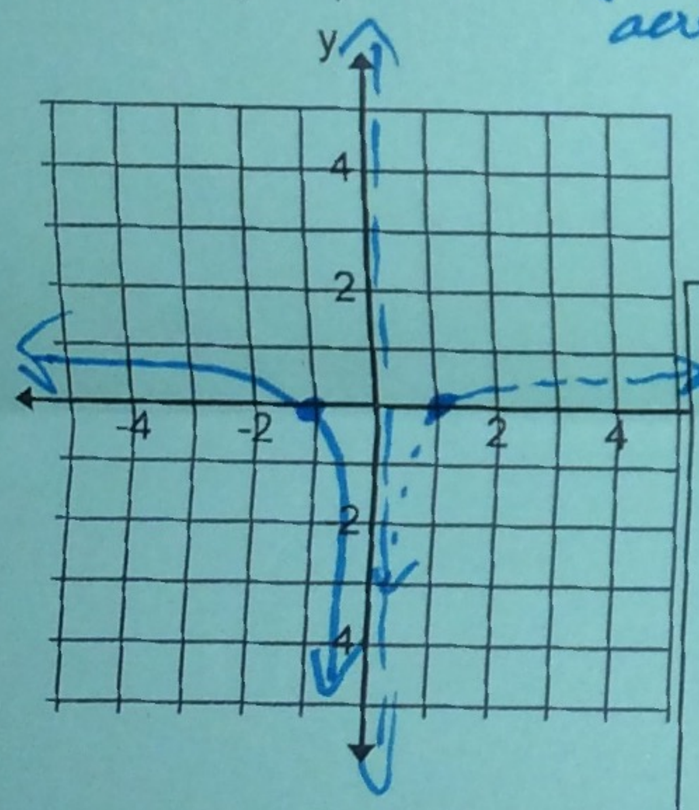
Domain: $x > 0$

Range: $\mathbb{R}$

Asym: $x = 0$

5. $y = \log(-x)$

Refl. across y-axis



x-int: -1

y-int: None

Domain: $(-\infty, 0)$

Range: $\mathbb{R}$

Asym: $x = 0$

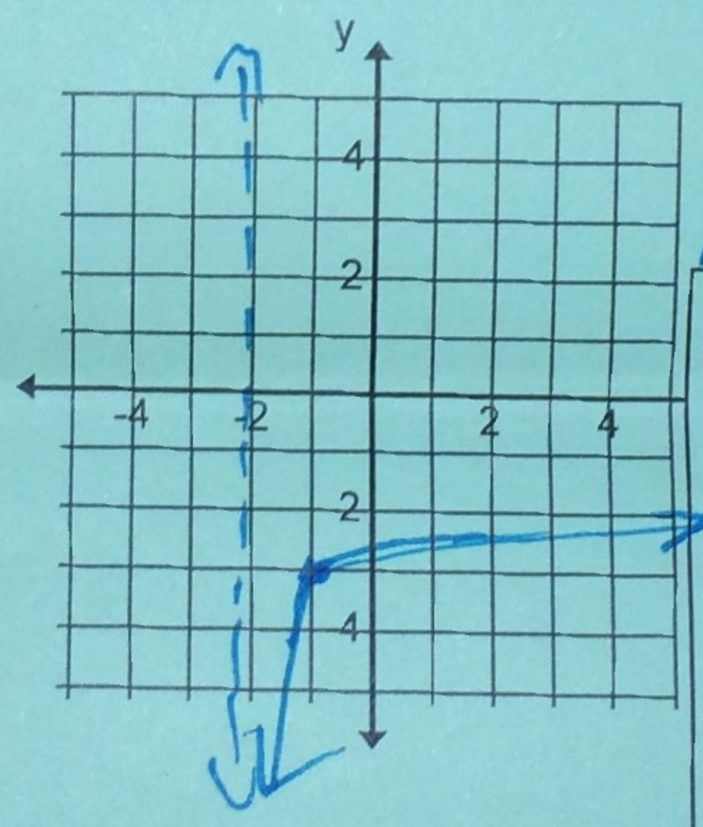
6. $y = \log(x+2) - 3$

left 2
down 3

$0 = \log(x+2) - 3$

$3 = \log_{10}(x+2)$

$10^3 = x+2$



x-int: 998

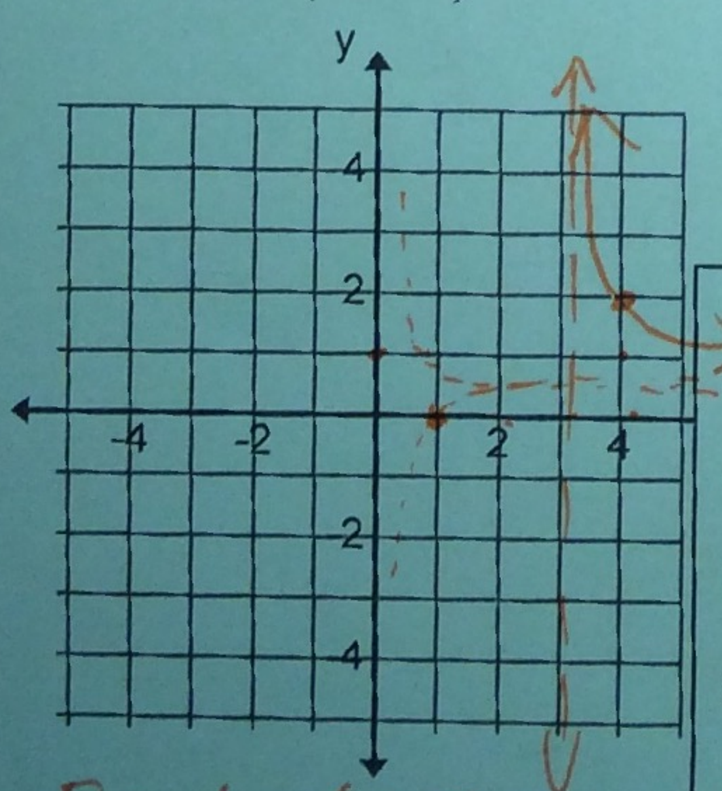
y-int: -2.69

Domain: $(-2, \infty)$

Range: $\mathbb{R}$

Asym: $x = -2$

7. $y = -\log(x-3) + 2$



x-int: 103

y-int: none

Domain: $x > 3$

Range: $\mathbb{R}$

Asym: $x = 3$

$0 = -\log(x-3) + 2$

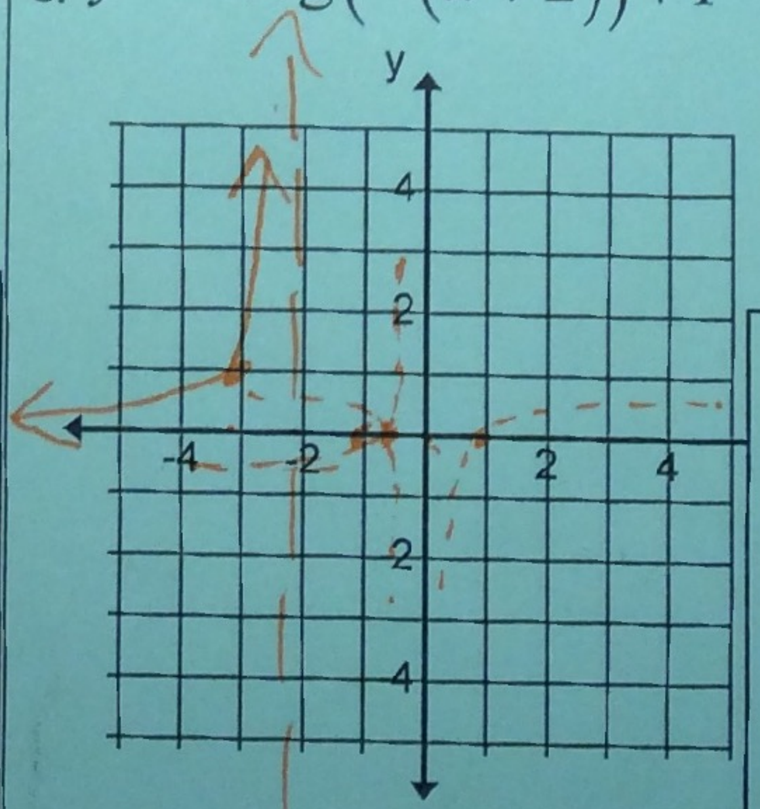
$2 = \log_{10}(x-3)$

$10^2 = x-3$

$100 = x$

$x = 103$

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



x-int: -12

y-int: none

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

Range: $\mathbb{R}$

Asym: $x = -2$

x-int: $0 = -\log[-(x+2)] + 1$

$1 = \log_{10}(-(x+2))$

$10 = -(x+2)$