

May 10

## GUIDED NOTES: Graphs of Logarithmic and Exponential Functions

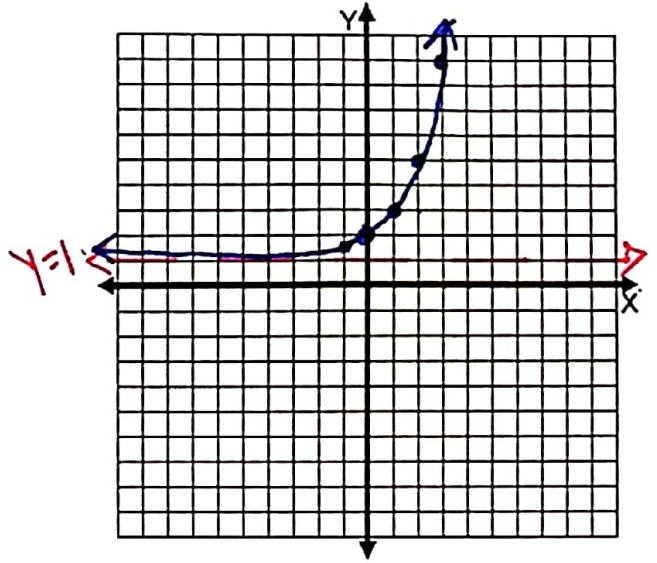
EX1. Graph  $f(x) = 2^x + 1$

domain:  $(-\infty, \infty)$

range:  $(1, \infty)$

horizontal asymptote:  $y = 1$

end behavior: as  $x \rightarrow -\infty, y \rightarrow 1$   
as  $x \rightarrow \infty, y \rightarrow \infty$



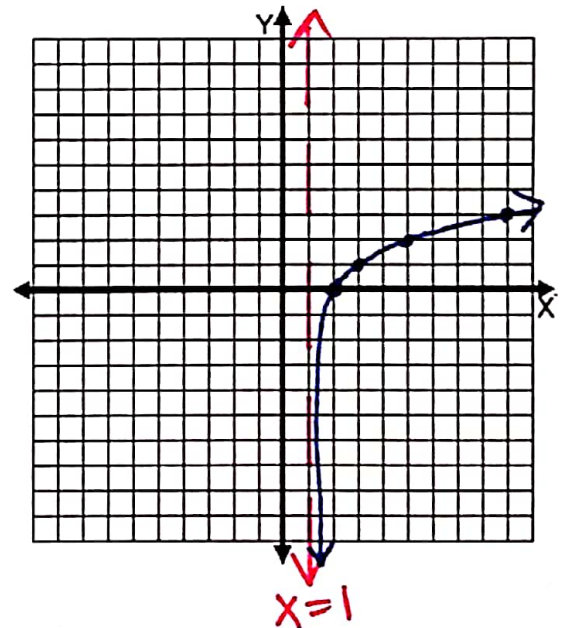
EX2. Graph  $f(x) = \log_2(x - 1)$

domain:  $(1, \infty)$

range:  $(-\infty, \infty)$

vertical asymptote:  $x = 1$

end behavior: as  $x \rightarrow 1^+, y \rightarrow -\infty$   
as  $x \rightarrow \infty, y \rightarrow \infty$



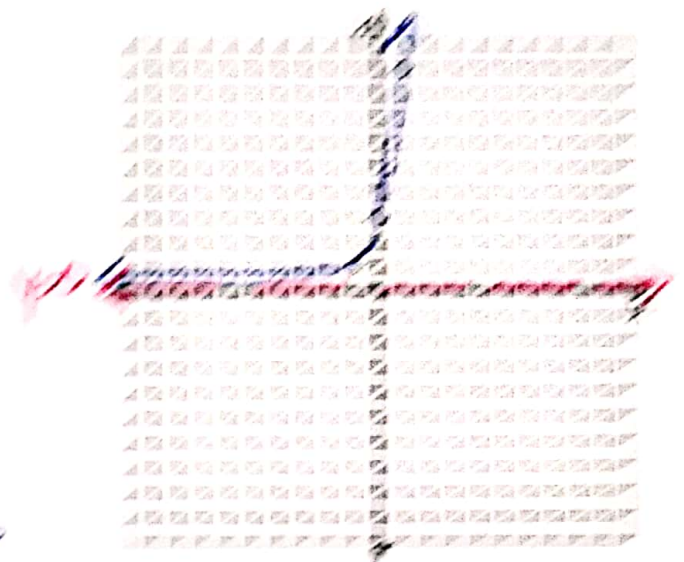
Ex 14. Graph of  $f(x) = x^2$

Vertex:  $(0, 0)$

Axis:  $(0, 1)$

Vertical asymptote:  $x = 0$

Graph passes through:  $(-1, 1), (1, 1)$   
 $(-2, 4), (2, 4)$



Ex 16. Graph of  $f(x) = \frac{1}{x}$

Vertex:  $(0, 0)$

Axis:  $(-1, 1)$

Vertical asymptote:  $x = 0$

Graph passes through:  $(-1, -1), (1, 1)$   
 $(-2, -0.5), (2, 0.5)$

