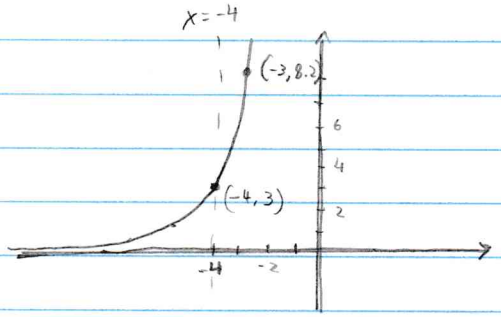
H. Algebra II Review KEY

Part 7 - Exponential and Logarithmic Functions

7a1] D: $-\infty < x < \infty$

R: $y > 0$

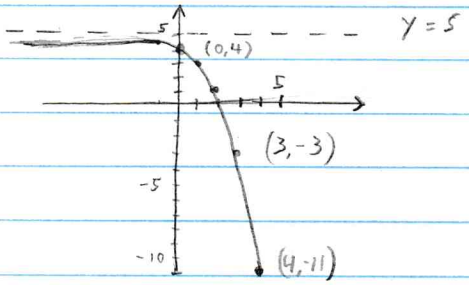
Horizontal Asymptote: $y = 0$



7a2] D: $-\infty < x < \infty$

R: $y < 5$

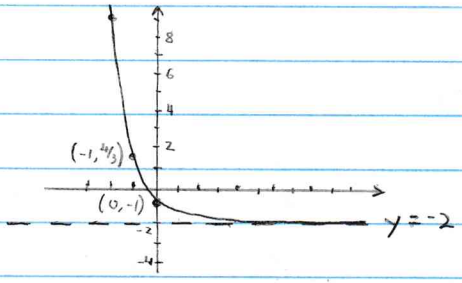
Horizontal Asymptote: $y = 5$



7a3] D: $-\infty < x < \infty$

R: $y > -2$

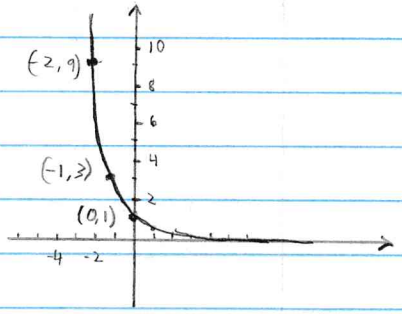
Horizontal Asymptote: $y = -2$



7a4] D: $-\infty < x < \infty$

R: $y > 0$

Horizontal Asymptote: $y = 0$



7b1] $x = \frac{1}{3} \cdot \text{Log}_{10}\left(\frac{3}{2}\right) \approx 0.0587$

7b2] $x = \frac{1}{3} \cdot \text{Ln}(12) \approx 0.828$

7b3] $x = \text{Ln}\,2, \text{Ln}\,3$

7b4] $x = \frac{1}{3}\left(\text{Log}_2\left(\frac{8}{3}\right) + 1\right) = \frac{1}{3}\left(\frac{\text{Ln}\,8 - \text{Ln}\,3}{\text{Ln}\,2} + 1\right) \approx 0.805$

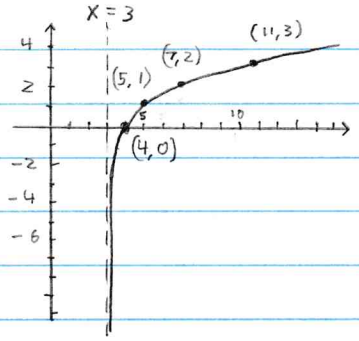
H. Algebra II Review KEY

Part 7 - Exponential and Logarithmic Functions

7c1] D: $x > 3$

R: $-\infty < y < \infty$

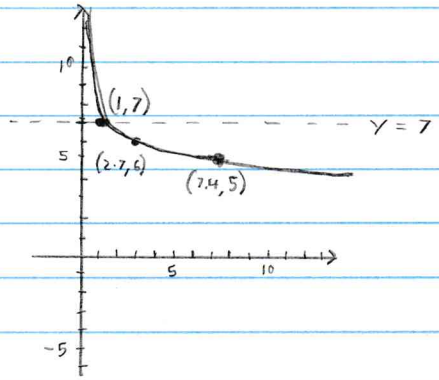
Vertical Asymptote: $x = 3$



7c2] D: $x > 0$

R: $-\infty < y < \infty$

Vertical Asymptote: $x = 0$



7d1] $x = \frac{1}{5} \cdot e^{10/3} \approx 5.606$

7d2] no solution ($x = -7$ is extraneous)

7d3] $x = \frac{-3 + \sqrt{9 + 4e}}{2} \approx 0.729$

7d4] no solution ($x = -3, -2$ are both extraneous)