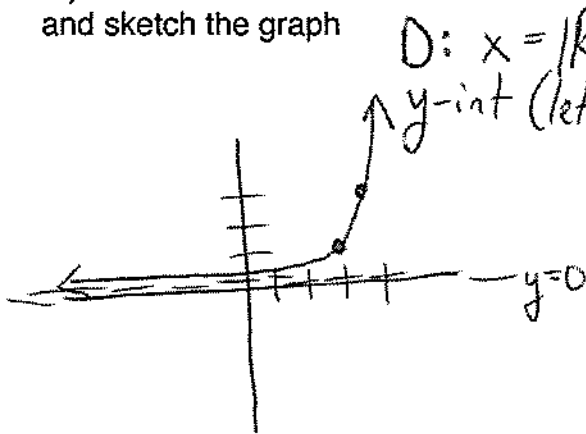


Log Graphing Practice and Review

- 1.) Given $y = 3^{2(x-3)}$ determine domain, range, equation of asymptote, y-intercept and sketch the graph

$b=3$

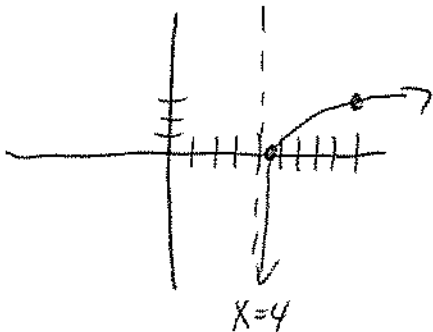


D: $x \in \mathbb{R}$ R: $y > 0$ asymptote at $y=0$
 y-int (let $x=0$) $\rightarrow y = \frac{1}{729}$

$(x, y) \rightarrow (\frac{x}{2} + 3, y)$
 $(0, 1) \rightarrow (3, 1)$
 $(1, 3) \rightarrow (3.5, 3)$

- 2.) Given $y = 3 \log_2(x-4)$ determine domain, range, equation of asymptote, y-intercept and sketch the graph

$b=10$



D: $x > 4$ R: $y \in \mathbb{R}$ asymptote at $x=4$
 y-int \rightarrow none.

$(x, y) \rightarrow (\frac{x}{3} + 4, 3y)$
 $(1, 0) \rightarrow (4.5, 0)$
 $(10, 1) \rightarrow (9, 3)$

- 3.) Solve the equation $y = 7(3)^x$

$y = 7(3)^x$

$\frac{y}{7} = 3^x$

$\log_3 \left(\frac{y}{7} \right) = x$

$\log_3 y - \log_3 7 = x$

- 4.) State the asymptotes for each of the following:

a.) $f(x) = \log_{\frac{1}{3}}(x-1)$

$x=1$

b.) $y = 3^{x-5}$

$y=0$

c.) $y = 2^{x-1} + 3$

$y=3$

Log Graphing Practice and Review

5.) Given the function $y = \log_4(x+2) - 3$ sketch the graph showing at least 2 points on the curve and state the equation of the asymptote and calculate the zero of this function.

$$b=4$$

asymptote at $x = -2$

$$y=0$$

$$0 = \log_4(x+2) - 3$$

$$3 = \log_4(x+2)$$

$$4^3 = x+2$$

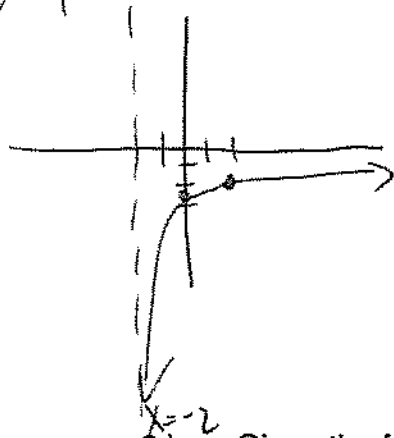
$$64 = x+2$$

$$x = 62$$

$$(x, y) \rightarrow (x-2, y-3)$$

$$(2, 1) \rightarrow (0, -2.5)$$

$$(4, 1) \rightarrow (2, -2)$$



6.) Given the function $y = 3^x + 2$ sketch the graph showing at least 2 points on the curve and state the equation of the asymptote and calculate the zero of this function.

asymptote at $y = 2$

$$y=0$$

$$0 = 3^x + 2$$

$$-2 = 3^x$$

$$\emptyset$$

$$(x, y) \rightarrow (x, y+2)$$

$$(0, 1) \rightarrow (0, 3)$$

$$(1, 3) \rightarrow (1, 5)$$

