

Intermediate Algebra
8.4-8.5 Review
Non-Calc

Name: _____

Key

Rewrite the equation in exponential form.

1. $\log_6 36 = 2$

$$6^2 = 36$$

2. $\log_5 1 = 0$

$$5^0 = 1$$

3. $\log 100 = 2$

$$10^2 = 100$$

Rewrite the equation in logarithmic form.

4. $3^2 = 9$

$$\log_3 9 = 2$$

5. $4^x = 60$

$$\log_4 60 = x$$

6. $4^{-3} = \frac{1}{64}$

$$\log_4 \frac{1}{64} = -3$$

Evaluate each of the following expression. Do not use a calculator!

7. $\log_4 16$

$$2$$

8. $\log_7 1$

$$0$$

9. $\log_2 16$

$$4$$

10. $\log_5 \frac{1}{25}$

$$-2$$

11. $\log_9 3$

$$\frac{1}{2}$$

12. $\log 100$

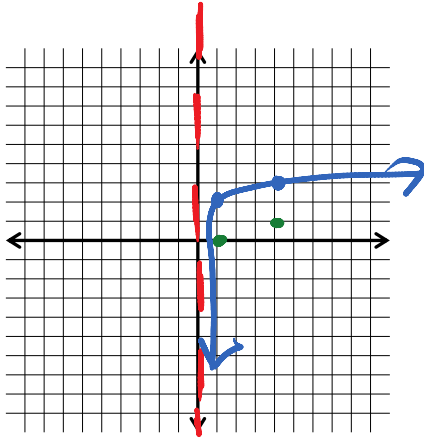
$$2$$

$$9^x = 3$$

↑
square root of 9

Graph each of the following functions and identify the indicated information.

13. $y = \log_4 x + 2$



Transformations: up 2

Asymptote: $x = 0$

Domain: $(0, \infty)$ Range: $(-\infty, \infty)$

x-intercept: $(1/16, 0)$

y-intercept: none

$$0 = \log_4 x + 2$$

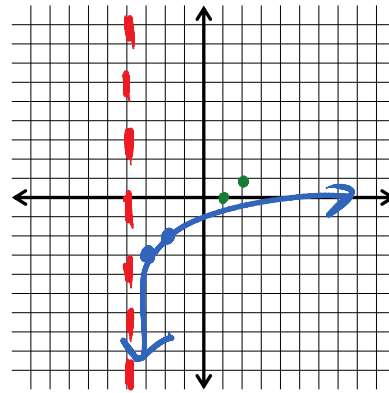
$$-2 = \log_4 x$$

$$-2 = \log_4 x$$

$$4^{-2} = x$$

$$\frac{1}{16} = x$$

14. $y = \log_2(x + 4) - 3$



Transformations: left 4,

down 3

Asymptote: $x = -4$

Domain: $(-4, \infty)$ Range: $(-\infty, \infty)$

x-intercept: $(4, 0)$

y-intercept: $(0, -3)$

$$0 = \log_2(x + 4) - 3$$

$$+3$$

$$3 = \log_2(x + 4)$$

$$3 = \log_2(x + 4)$$

$$2^3 = x + 4$$

$$8 = x + 4$$

$$-4$$

$$x = 4$$

$$y = \log_2(0 + 4) - 3$$

$$y = \log_2 4 - 3$$

$$y = 2 - 3$$

$$y = -1$$