

**Pre-Calculus
Chapter 3 Review**

Name _____ Date _____ Per _____

Show all the work clearly to receive full credit.

Use $y = \log_3(x+2)$ for problems 1 - 5

- 1) Graph it.
Fill in a table of values or graph by translation.
- 2) Find the domain.
- 3) Find the range.
- 4) Find the y-intercept (if any).
- 5) Describe the end-behavior.

x	y
	-3
	-2
	-1
	0
	1
	2
	3

Solve:

6) $\log_4(3x-2) = 3$

(Round to 4 decimal places)

7) $e^{x-3} = 9$

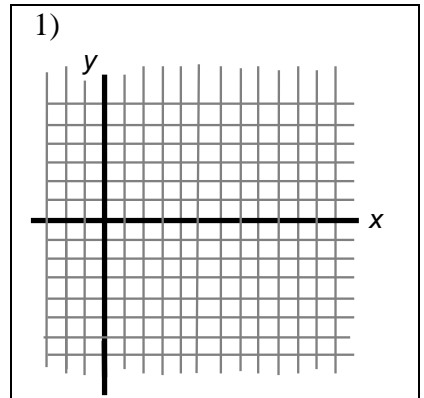
8) $2 \log_6 4 - \frac{1}{3} \log_6 8 = \log_6 x$

9) $\log_4(2a-2) = \log_4(a^2-5)$

10) $\log_5 125 = 2x$

(Round to 4 decimal places)

11) $3^{2x} = 4^{x-3}$



1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) _____

9) _____

10) _____

11) _____

12) _____

13) _____

14) _____

15) _____

16) _____

17) _____

18) _____

19) _____

20) _____

21) _____

$$12) \ln 3 + \ln(x - 2) = \ln 5$$

(Round to 4 decimal places)

$$13) \ln(3x + 1) - \ln x = 5$$

(Round to 4 decimal places)

$$14) 36 < e^{0.5x}$$

(Round to 4 decimal places)

$$15) 2^{3x} = 6^{x-2}$$

Evaluate and round to four decimal places:

$$16) \log_6 21 \text{ (Using common logs)}$$

$$17) \log_8 41 \text{ (Using natural logs)}$$

Simplify:

$$18) (a^{\sqrt{3}} y^{5\sqrt{3}})^{\sqrt{3}}$$

$$19) \left(\frac{36}{x^{-2}} \right)^{\frac{4}{3}}$$

$$20) \frac{5}{2\sqrt{3}}$$

$$21) \left(\frac{64x^{-1}y^5}{4x^{-9}y} \right)^{\frac{3}{4}}$$