NAME_____ Date _____ Pd ___

6.3 Logarithmic Function DAY TWO CYU

☑ *Use when you get it right all by yourself*

S *Use when you did it all by yourself, but made a silly mistake*

H *Use when you could do it alone with a little help from teacher or peer*

G *Use when you completed the problem in a group*

X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Converting between inverses	1 - 14		31
Evaluating logarithmic expression		15	
Solving logarithmic equations		16 - 30	31

FILL IN ALL BLANKS BELOW. If given exponential form, write in log form; if given log form, write in exponential form. **The first 3 are done for you as examples and reminders. ** I heart logs!!****

Exponential: $b^y = x$	**Logarithmic:** $\log_b x = y$
1. $6^2 = 36$	1. $\log_6 36 = 2$
2. $10^4 = 10{,}000$	2. $\log_{10} 10{,}000 = 4$
3. $2^{-3} = \frac{1}{8}$	3. $\log_2 \frac{1}{8} = -3$
4. $9 = 27^{\frac{2}{3}}$	4. _____
5. $8 = 2^3$	5. _____
6. $.001 = 10^{-3}$	6. _____
7. _____	7. $\log_{16} 4 = \frac{1}{2}$
8. _____	8. $\log_{81} \frac{1}{9} = -\frac{1}{2}$
9. _____	9. $\log_3 9 = 2$
10. $6^{-2} = \frac{1}{36}$	10. _____
11. $1 = 5^0$	11. _____
12. $\frac{1}{125} = 5^{-3}$	12. _____
13. _____	13. $\log_{\frac{1}{2}} \frac{1}{8} = 3$
14. _____	14. $\log_5 125 = 3$

15. Evaluate.

a. $\log_5 25$ b. $\log_3 \frac{1}{9}$ c. $\log_{\frac{1}{2}} 16$ d. log 1000 e. ln e f. log 1

Solve for x.

16. $\log_3 x = -4$

17. $\log_{-4} x = \frac{1}{2}$

18. $\log_5 x = -3$

19. $\log_{\frac{1}{3}} x = -2$

20. $\log_2 \left(x^2 - 9\right) = 4$

21. $\log_3 \sqrt{x-2} = -1$

22. $\log_{64} \frac{1}{2} = x$

23. $\log_{\frac{1}{4}} 16 = x$

24. $\log_{\sqrt{2}} x = -6$

25. $\log_x 81 = \frac{4}{3}$

26. $\log_x \frac{1}{4} = -\frac{1}{2}$

27. $\log_x 3 = 0$

28. $\log_x \frac{1}{16} = 2$

29. $\log_x 32 = \frac{5}{2}$

30. $\log_x 64 = -3$

31. Solve over the set of real numbers.

a) $27^{x+4} = \frac{1}{3}$

b) $8^{\frac{1}{2}} = 4^{x^2 - x}$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.