

P5-3: The Meaning of Logarithms

Honors Advanced Algebra

Name: _____

Period: _____ Date: _____

Rewrite each equation in exponential form.

1. $\log_6 36 = 2$

2. $\log_{289} 17 = \frac{1}{2}$

3. $\log_{14} \frac{1}{196} = -2$

4. $\log_3 81 = 4$

5. $\log_u \frac{15}{16} = v$

6. $\log_x y = 4$

Rewrite each equation in logarithmic form.

7. $64^{\frac{1}{2}} = 8$

8. $12^2 = 144$

9. $9^{-2} = \frac{1}{81}$

10. $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$

11. $8^b = a$

12. $x^w = 123$

Evaluate each expression.

13. $\log_4 64$

14. $\log_{343} 7$

15. $\log_6 \frac{1}{216}$

16. $\log_3 \frac{1}{243}$

Simplify each expression.

17. $12^{\log_{12} 144}$

18. $5^{\log_5 17}$

19. $\log_3 3^4$

20. $\log_7 7^a$