

Assignment 2.3

Use the properties of logarithms to rewrite each expression, simplify if possible.

1. $\log_5(7x)$

2. $\log_5(10a)$

3. $\log_5\left(\frac{5}{b}\right)$

4. $\log_5\left(\frac{d}{4}\right)$

5. $\log_6(x^3)$

6. $\log_5(9x^2)$

7. $\log_5(7x)^4$

8. $\log_3(\sqrt{w})$

9. $\log_5\left(\frac{xyz}{w}\right)$

10. $\log_2\left(\frac{x^2}{y^5w^3}\right)$

Refresh Your Memory

Convert to logarithmic form.

11. $2^9 = 512$

12. $10^{-2} = 0.01$

13. $\left(\frac{2}{3}\right)^{-1} = \frac{3}{2}$

Convert to exponential form.

14. $\log_4 2 = \frac{1}{2}$

15. $\log_{\frac{1}{3}} 3 = -1$

16. $\log_{\frac{2}{5}} \frac{8}{125} = 3$

Rewrite each root using a fractional exponent, simplify if possible.

17. $\sqrt[3]{w^8}$

18. $\sqrt[3]{8r^6}$

19. $\sqrt[5]{125m^5}$

20. $\sqrt[3]{(8x)^2}$

21. $\sqrt[3]{9b^8}$

22. $\sqrt{75x^6}$