

CALCULUS 2

Name: _____

WORKSHEET 7.1-2

Expand each logarithm.

1. $\log_6 3x$

2. $\log_2 \frac{x}{7}$

3. $\log_4 xy^2$

4. $\log_3 \frac{(x+3)(y-2)}{3}$

5. $\log_3 \sqrt{xy^4}z$

6. $\log_2 \frac{3x^2y}{(z-3)^4}$

7. $\log_5 \frac{(xy)^4}{z^2}$

8. $\log_8 \sqrt[3]{\frac{x^2y^3}{z^4}}$

Write each logarithmic expression as a single logarithm.

9. $\log_3 7 - \log_3 x$

10. $2 \log_5 x + \log_5 3$

11. $\frac{2}{3} \log_2 x - 3 \log_2 y$

12. $\frac{1}{2} (\log_3 4 + \log_3 y) - 3 \log_3 z$

13. $\frac{1}{2} \log_7 x + \frac{1}{3} \log_7 y - 2 \log_7 z$

14. $\log_5 x - 4(\log_5 y + 2 \log_5 z)$

15. $\log_2 (x-4) + 5 \log_2 (x+1) - \frac{3}{4} \log_2 (x-1)$

16. $\frac{1}{2} [\log_6 (x-2) + 2 \log_6 (x+1) - \log_6 (x+2) - 5 \log_6 x]$

Evaluate.

17. $\log_2 16$

18. $\log_a a^2$

19. $\log_3 7$

20. $6^{\log_6 7}$

21. $\log_3 14.62$

22. $\log_a \frac{1}{a}$

Solve.

23. $2^x = 3$

24. $3^{x-1} = 25$

25. $2^{3x+4} = 5$

26. $2^{x-2} = 16$

27. $3^{x+1} = 4^x$

28. $3^{1-x} = 5^{2-3x}$

29. $e^{6x} = 314$

30. $225 = 31e^{-.07x}$

31. $\ln 2.1 = \ln e^{3.2x}$