

What do we Remember?

Logarithms

1. Write in logarithmic form:  $4^3 = 64$
2. Write in exponential form:  $\log_5 125 = 3$
3. Write in expanded form using the law of logarithms.

$$\log_2 \sqrt{\frac{m}{n}}$$

$$\ln \frac{x^2}{3y}$$

4. Write in condensed form (use as single log) using the law of logarithms.

$$\frac{1}{2} \log_2 x - 2 \log_2 4 + \log_2 12y + \log_2 w$$

Solve and Check.

$$5. \log_x \sqrt{6} = \frac{1}{2}$$

$$6. 27^{1-x} = \left(\frac{1}{9}\right)^{2-x}$$

$$7. 9^{4x} = 81$$

$$8. \log_9 7 + \frac{1}{2} \log_9 4 = \log_9 x$$

$$9. \log_2 x + \log_2 (x - 2) = 3$$

$$10. \log_2 (x^2 + 8) = \log_2 x + \log_2 6$$

$$11. \log_3 (x - 4) = 2$$

$$12. \log_{\sqrt{3}} x = 4$$

Solve

$$13. e^{\ln 4x} = \ln 9.4$$

$$14. 2500 = 4 e^{0.58x}$$

15. If \$750 is invested at 8% annual interest that is compounded monthly when will the investment be worth \$1600?

16. If \$50 is invested at 8% annual interest that is compounded continuously when will the investment be worth \$200?

17. A certain bacteria can grow from 40 to 185 in 3.5 hours. Find the constant k for the bacteria.