

## Log equations

**Solve each equation.**

1)  $216^k = 36$

2)  $\left(\frac{1}{6}\right)^{2p} = 6^2$

3)  $81^{1-n} = \frac{1}{243}$

4)  $6^{2b+3} \cdot 6^{3b} = 36$

**Solve each equation. Round your answers to the nearest ten-thousandth.**

5)  $18^x = 36$

6)  $2^n = 89$

$$7) 8^y = 26$$

$$8) 8^{x-9} + 7 = 8$$

$$9) -9 \cdot 13^{-9x} = -66$$

$$10) -8 \cdot 8^{p-1} = -14$$

**Solve each equation.**

$$11) \log_9 3x = \log_9 -5x$$

$$12) \log_{14} (5x - 6) = \log_{14} 4x$$

$$13) \log_{18} (n^2 - 98) = \log_{18} 2$$

$$14) -7 \log_{12} m = 7$$

$$15) \log_2 (k + 10) + 5 = 3$$

$$16) \log_{20} (x^2 - 9) = \log_{20} (-5x - 3)$$