

Equations

Date _____ Period _____

Solve each equation.

1) $\log_{18} -2m = \log_{18} (m + 5)$

2) $\log_4 -2r = \log_4 (-3r - 6)$

3) $\log_{11} (3v - 4) = \log_{11} 2v$

4) $\log_{13} 23 = \log_{13} (2k + 3)$

5) $\log_3 3b = \log_3 (2b + 7)$

6) $-7\log_5 k = 14$

7) $\log_4 p + 6 = 9$

8) $-5 + \log_8 (x + 1) = -4$

9) $\log (b + 5) - 8 = -5$

10) $\log_9 (x + 6) + \log_9 10 = 2$

- 11) The population of Bridgetown is growing at the rate of 2.5% per year. The present population is 50,000. When will the population be 100,000?
- 12) The population of Centerville in the year 1910 was 4200. Assume that the population increased at a rate of 2.25% per year. When will the population be 6000?
- 13) Megan is the trust officer for an estate. If she invests \$15,000 into an account that carries an interest rate of 8% compounded monthly, how long will it be until the account has a value of \$45,000 for Megan's client?
- 14) The population of Green Willow was 28,000 in 1980. If the population is growing at a rate of 3.8% per decade, find the population in 2010.
- 15) I have 500 grams of bacteria that triples every 6 hours. How much will there be after a day?