

Name _____ Date _____ Period _____

18.4 – Solving Logarithms

Solve each logarithmic equation.

1. $\log_{15}(3x - 7) = \log_{15}(2x + 10)$

2. $\log_{18}(2x + 5) = \log_{18} 3x$

3. $\log_2(2x - 10) = \log_2 8$

4. $\log_9(-2) = \log_9(5x + 8)$

5. $\log_7 3x = \log_7 15$

6. $\log_{18}(5x - 5) = \log_{18}(7 - x)$

7. $\log_3 3x = \log_3(5x - 6)$

8. $\log_8(-5x + 6) = \log_8(-14)$

9. $\log_5 x^2 = \log_5 100$

10. $\log_6 25 = \log_6 x^2$

$$11. \log_4 x + \log_4 10 = \log_4 20$$

$$12. \log_9 5 + \log_9 x = \log_9 20$$

$$13. 2 \log_3 x = \log_3 64$$

$$14. \log_5(x + 7) + \log_5 4 = \log_5 32$$

$$15. \log_7(-25x) - \log_7 5 = \log_7 35$$

$$16. \log_4 x - \log_4 8 = \log_4 2$$

$$17. 2 \log_2 2x = \log_2 64$$

$$18. \log_6 3 + \log_6(x + 10) = \log_6 60$$

$$19. 2 \log_9 3x - \log_9 3x = \log_9 18$$

$$20. \log x - \log 4 = \log 4$$