AGS 3 Name: _____ Period: _____ Date: _____

Assignment 2.5

Evaluate each expression.

1. $\log 10$
2. $\log 10^{-7}$
3. $\log 10^{75}$
4. $\log 10^{x}$

5. $\log_3 3^5$
6. $\log_8 8^{-3}$
7. $\log_{11} 11^{37}$
8. $\log_m m^n$

Solve each equation, rewriting as needed.

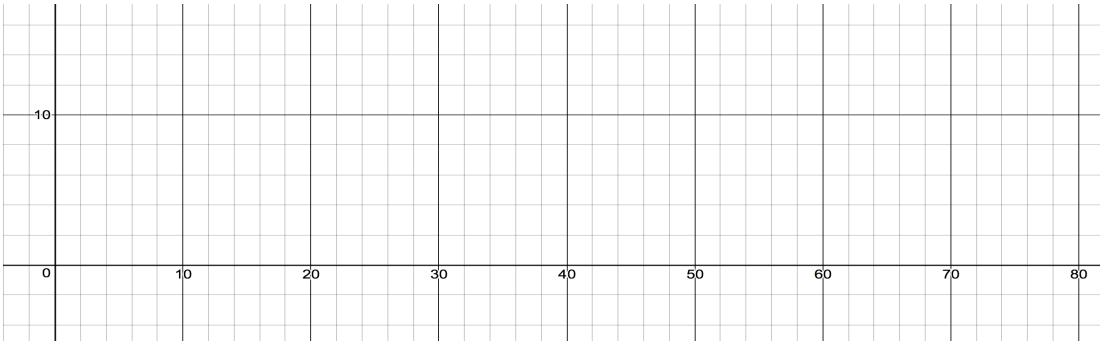
9. $10^x = 4.305$
10. $10^x = 0.316$

11. $10^x = 14{,}521$
12. $10^x = 483.059$

13. The number of fish in an aquarium is given by $f(t) = 4\log(5t + 10)$, where t is time in months. Find the number of fish present given the following times. Then graph $f(t)$.

    a. $t = 0$
    b. $t = 12$
    c. $t = 24$

    d. $t = 36$
    e. $t = 60$
    f. $t = 72$



Refresh Your Memory

Convert to logarithm form.

14. $3^6 = 729$

15. $5^{-2} = 0.04$

16. $\left(\frac{4}{7}\right)^{-1} = \frac{7}{4}$

Convert to exponential form.

17. $\log_6 216 = 3$

18. $\log_9 1 = 0$

19. $\log_2 0.5 = -1$

Use the properties of logs to rewrite each expression in expanded form.

20. $\log_4 4x^3$

21. $\log_5 \sqrt{\frac{m}{n}}$

22. $\log_3 \frac{9w}{xyz}$