

Math 1050 – Sullivan Chapter 6 Lab

(Use no calculators except on #9)

1. $4^{3x} = 8^{x+4}$

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

3. $\log_8 64 = x$

4. $\log_2 \sqrt{8} = x$

5. $\log_x \left(\frac{1}{49}\right) = -2$

6. $\log_4 x = \frac{3}{2}$

7. $\log_k 4 = 1$

8. $\log_b b^2 = 2$

9. $pH = -\log[H^+]$

a. If $[H^+] = 4.0 \times 10^{-7}$, what is the pH?

b. If $pH = 4.6$, find $[H^+]$.

10. $\log_5 (y + 6)^3 = 2$

11. $\log(2x + 3) = 1 + \log x$

12. $\log x^2 = 2$

13. $e^{2x} + 3e^x - 10 = 0$

14. Find $f^{-1}(x)$ of the following functions. State the domains and ranges of $f^{-1}(x)$.

a. $f(x) = \sqrt{4 - x^2}$

b. $f(x) = \frac{3}{x} - \frac{1}{2}$