

## Section 5.2: Logarithmic Functions

### Exercises

Solve for  $x$ . Give both an exact answer (with “ $\log_{10}$ ” or just “log” in your answer) and a decimal approximation.

1.  $10^x = 0.75$

2.  $10^x = 12\,345$

3.  $10^{2x} = 37$

4.  $10^{x+5} = 23.7$

5.  $10^{1-x} = 0.002$

6.  $10^{2x+3} = 8$

Solve for  $x$ . Give both an exact answer (containing “ln”) and a decimal approximation.

7.  $e^{x+2} = 9$

8.  $e^{-2x} = 18$

9.  $e^{3x-1} = 0.7$

10.  $e^{x-4} = 1$

11.  $e^{2-5x} = 157$

12.  $e^{x+1} = \pi$

Simplify.

13.  $\log_2 4$

14.  $\log_{10} 0.0001$

15.  $\log_7 1$

16.  $\log_2 \frac{1}{8}$

17.  $\log_2(-4)$

18.  $\log_3 81$

19.  $\log_{20} 20$

20.  $\log_{1000} 10$

Write the corresponding exponential/logarithmic equation. Don't simplify!

21.  $y = e^x$

22.  $y = \log_2 x$

23.  $f = h^2$

24.  $m = n^p$

25.  $y = \log_x 2$

26.  $10 = k^m$

27.  $x = \log_2 y$

28.  $8 = \log_6 c$