1. common

2. log base 3 of 9

3. They are inverse equations.

4. Evaluate 4^2; 16; 2

5. $3^2 = 9$

6. $4^1 = 4$

7. $6^0 = 1$

8. $7^3 = 343$

9. $\left(\frac{1}{2}\right)^{-4} = 16$

10. $3^{-1} = \frac{1}{3}$

11. $\log_6 36 = 2$

12. $\log_{12} 1 = 0$

13. $\log_{16} \frac{1}{16} = -1$

14. $\log_5 \frac{1}{25} = -2$

15. $\log_{125} 25 = \frac{2}{3}$

16. $\log_{49} 7 = \frac{1}{2}$

17. 4

18. 2

19. 1

20. 0

21. -4

22. -3

23. -1

24. -3

25. $\log_7 8$, $\log_5 23$, $\log_6 38$, $\log_2 10$

26. There is no power of 2 that gives you -1, and all powers of 1 give you 1.

27. 0.778

28. 2.485

29. -1.099

30. -0.544

31. -2.079

32. 0.778

33. 4603 m

34. **a.** 8
b. 3