

21. $x = 6$

22. $x = 10$

23. $x = 3$

24. $x = 5$

25. $x = 6$

26. $x = 4$

27. $x = 10$

28. $x = 123$

29. $x = 1$

30. $x = 9$

31. $x = \frac{1 + \sqrt{41}}{2} \approx 3.7$ and $x = \frac{1 - \sqrt{41}}{2} \approx -2.7$

32. $x = -6$ and $x = -3$

33. $x = 4$

34. $x = 9$

35. $x \approx 6.04$

36. $x \approx 13.22$

37. $x = \pm 1$

38. $x = -2$ and $x = -8$

39. $x \approx 10.24$

40. $x \approx 2.72$

41. 3 should be the base on both sides of the equation;

$$\log_3(5x - 1) = 4$$

$$3^{\log_3(5x - 1)} = 3^4$$

$$5x - 1 = 81$$

$$5x = 82$$

$$x = 16.4$$

43. a. 39.52 years

b. 38.66 years

c. 38.38 years

d. 38.38 years

44. 100 mm

45. a. $x \approx 3.57$

b. $x = 0.8$

46. no; The solution can be negative. For example, $\log(9 - x) = 1$ has the solution $x = -1$.