SM3 Test review on unit 11
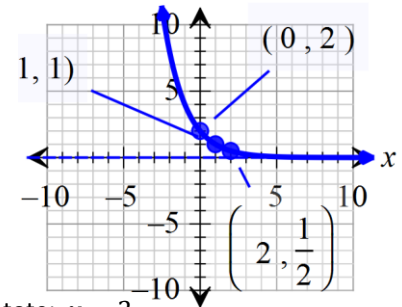
1. -2

2. 5

3. 3

4. $\frac{1}{2}$

5. $-\frac{1}{2}$

6. 3

7. 2

8. 20

9. -2

10. 1

11. 0

12. ≈ 1.5051

13. $\approx -.0202$

14. no solution

15. ≈ 172.4662

16. $10^4 = x$

17. $e^x = 5$

18. $3^5 = 243$

19. $\log_5 625 = 4$

20. $\log 100 = x$

21. $\ln x = 2$

22. $x = 1$

23. $x = 3$

24. reflect over $y-$axis, translate down 7

25. vertical stretch by factor of 3, translate left 3

26. D

27. $(\log_2 5 + \log_2 x) - \log_2 y$

28. $\log_8(2x - 3) - 4\log_8 x$

29. $\log_3\left(\frac{6}{a}\right)$

30. $\log(x^4 y^2)$

31. $\log_4\left(\frac{9x-45}{x^7}\right)$

32. $\frac{\log 210}{\log 3.4} \approx 4.3694$

33. $\frac{\log 3.8}{\log 4} \approx 0.9630$

34. $x = 2$

35. $x \approx 3.990$

36. $x = 30$

37. $x = 166670$

38. $x \approx 3.447$

39. $x = \frac{5}{2}$

40. $x = 84$

41. $x = \frac{41}{12}$ or $x \approx 3.417$

42. $x \approx 6.161$

43. $x \approx 0.050$

44. Domain: $(-\infty, \infty)$, Asymptote: $y = 0$
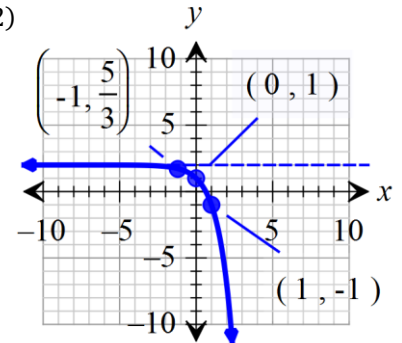Key points and transformations: translate right 1,
Range: $(0, \infty)$
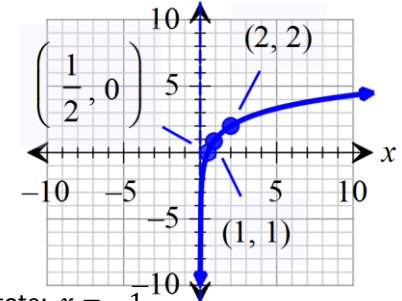

45. Domain: $(-\infty, \infty)$, Asymptote: $y = 2$
Key points and transformations: reflect over $x-$axis,
translate up 2, Range: $(-\infty, 2)$
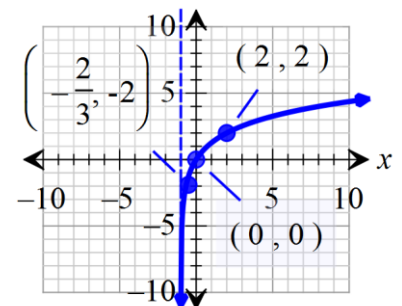

46. Domain: $(0, \infty)$, Asymptote: $x = 0$
Key points and transformations: translate up 1,
Range: $(-\infty, \infty)$

47. Domain: $(-1, \infty)$, Asymptote: $x = -1$
Key points and transformations: vertical stretch by
factor of 2, translate left 1, Range: $(-\infty, \infty)$

48. $f^{-1}(x) = \frac{x+3}{2}$

49. $f^{-1}(x) = \sqrt[3]{4x + 2}$
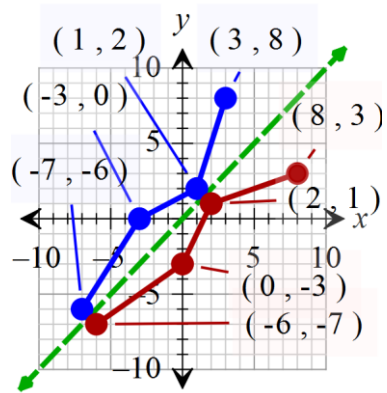
50. $f^{-1}(x) = x^2 - 3$

51. $f^{-1}(x) = -2 \pm \sqrt{\frac{x+3}{2}}$

52. $f^{-1}(x) = \frac{(-x+5)^3}{3}$

53. $f^{-1}(x) = \frac{x+5}{2x-3}$ or $f^{-1}(x) = \frac{-x-5}{-2x+3}$

54. $(-\infty, 10)$

55.

(1 , 2) (3 , 8)
(-3 , 0)
(8 , 3)
(-7 , -6)
(2 , 1)
(0 , -3)
(-6 , -7)

56. $A \approx \$14859.47$

57. $t \approx 7$ years