

Chapter 11 Solutions

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Section 11.1 – Properties of Exp

20. $\frac{1}{1296}$

22. 225

24. $\frac{512}{343}$

26. 9

28. 3

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

32. 729

34. $8\frac{8}{9}$

36. $27n^6$

38. $8y^6$

40. $\frac{1}{256x^8}$

42. b^{2n}

44. $3^{16}m^2n$

49. $m^3n^{\frac{1}{2}}$ or $|m^3|n^{\frac{1}{2}}$

50. $x^{\frac{1}{2}}y^{\frac{3}{2}}$

51. $2xy^2$

52. $17x^2y^{\frac{12}{7}}$

53. $a^2b^{\frac{2}{5}}c^{\frac{1}{2}}$

54. $60r^{10}|s^7|t^{\frac{27}{8}}$

55. $\sqrt[5]{16}$

56. $\sqrt[8]{7^5a^5b^3}$

57. $\sqrt[6]{p^4q^3r^2}$

58. $\sqrt[3]{2}$

59. $13^{21}\sqrt{a^3b^7}$

60. $nm^4\sqrt{mn}$

62. $d|ef|\sqrt{d}$

63. $ab^2\sqrt[3]{a^2bc}$

64. $2x|y^3|\sqrt{5x}$

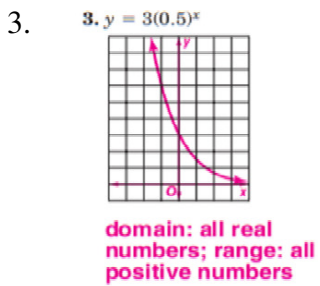
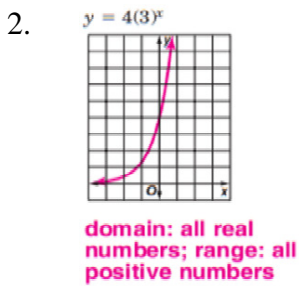
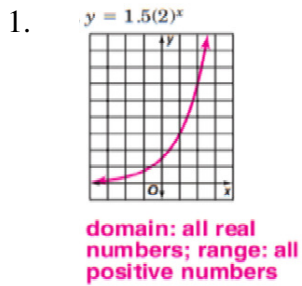
65. 0.17

66. 4.68

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Worksheet 10.1



4. Decay

5. growth

6. decay

13. 16

14. n^{15}

15. $y^{6\sqrt{6}}$

16. $13^{3\sqrt{5}}$

17. $n^{3-\pi}$

18. $5^{2\sqrt{11}}$

19. $x > 3$

20. -5

21. $n > \frac{1}{2}$

22. 14

23. $n \geq \frac{1}{6}$

24. $\frac{11}{2}$

25. $y = 12000(2)^x$

26. 768,000

27. $y = 4000(1.05)^t$

17. $x > 2$

18. 1

19. $x \leq -\frac{1}{2}$

20. $\frac{4}{3}$

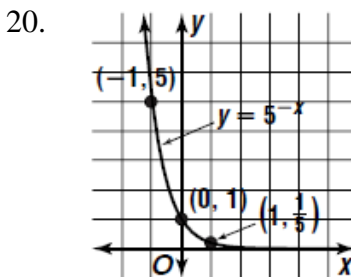
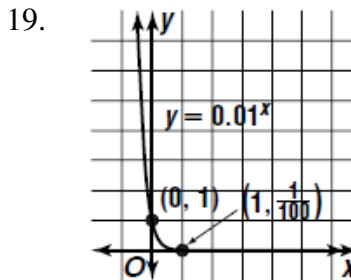
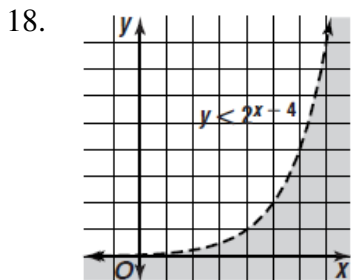
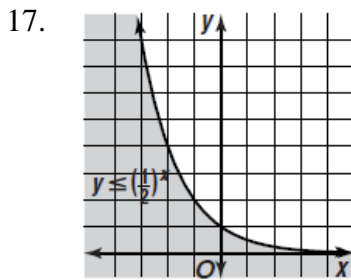
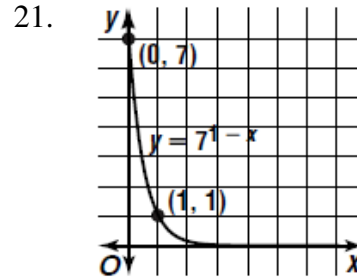
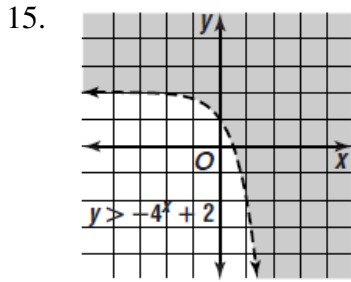
21. 5

22. 3

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Section 11.2 (HW 10.2)



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Worksheet 10.2

1. $\log_5 125 = 3$

2. $\log_7 1 = 0$

3. $\log_3 81 = 4$

4. $\log_3 \frac{1}{81} = -4$

5. $\log_{\frac{1}{4}} \frac{1}{64} = 3$

6. $\log_{7776} 6 = \frac{1}{5}$

7. $6^3 = 216$

8. $2^6 = 64$

9. $3^{-4} = \frac{1}{81}$

10. $10^{-5} = \frac{1}{100000}$

11. $25^{\frac{1}{2}} = 5$

12. $32^{\frac{3}{5}} = 8$

13. 4

14. -4

15. -4

16. -3

17. 0

18. $\frac{2}{3}$

19. -2

20. 4

21. -1

22. -4

23. $n + 1$

24. 32

25. $\frac{1}{1000}$

26. $x > 64$

27. 8

28. 125

29. $0 < q < 1$

30. $y \geq 14$

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

32. 2

33. 4

34. $x > 4$

35. -2

36. 2

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Worksheet 10.3

9. 4

30. 6

10. 8

11. 6

12. 12

13. 2

14. 3

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

16. 4

17. 2

18. 1

19. 2

20. 0

21. 2

22. 3

23. 25

24. 4

25. ± 4

26. 3

27. 8

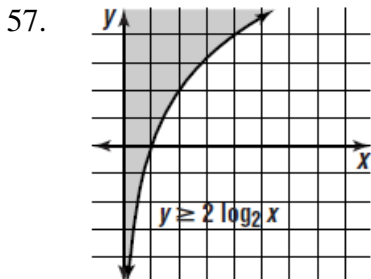
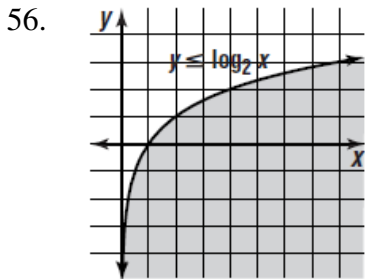
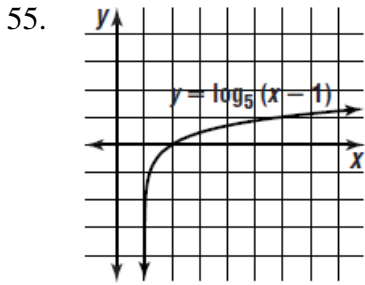
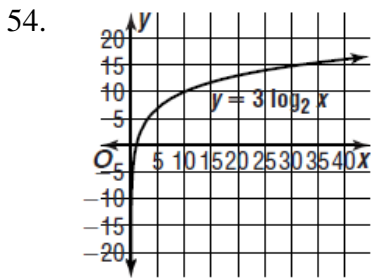
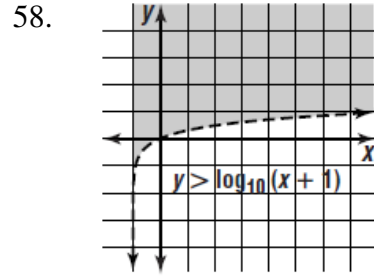
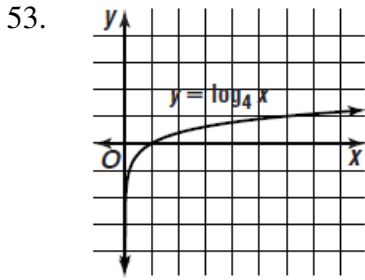
28. 0

29. 101

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Section 11.4 (HW 10.2) – pg 724



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Worksheet 10.4

8. $x < 4.6439$
9. 2.9746
10. 2.1319
11. $m \geq 2.0959$
12. 3.0885
13. 1.9802
14. $b \leq 1.8699$
15. 1.1887
16. 10.3593
17. $z > 3.6555$
18. -1.2396
19. ± 1.0725
20. ± 2.3785
21. 3.8188
22. 0.9117
23. 1.5440
24. 1.6667
25. 0.9163
26. 4.169
27. 0.8155
28. 0.5343

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Worksheet 11.1

(Top Left Section)

- $2\sqrt{6}$
- $5\sqrt{3}$
- $2\sqrt[3]{2}$
- $-2\sqrt[4]{3}$
- $20x^2\sqrt{2x}$
- $2|ab|\sqrt[4]{4}$
- $-\frac{1}{2}f^3\sqrt{d^2f^2}$
- $\frac{5}{6}|s|\sqrt{t}$

(Top Right Section)

- 3
- $|y|$
- 5s
- $8x^3$
- $-3a^2$
- m^4n^2
- $-10p^2|q|$
- $2|w|v^2$
- $(-3c)^2$
- $|a + b|$

(Bottom Half of WS)

- $|14a|$
- Not Possible
- $7|m|t^4$
- $\frac{4|m|}{5}$
- $-4r^2w^5$
- $(2w)^4$
- $-5s^2$
- $6pq^3$
- $26x^2|y^3|$
- $-3x^3y^4$
- $-12m^4|n|^3$
- $-2xy^2$
- $|m + 4|$
- $(2x + 1)$
- $-7|a|^5b^8$
- $(x - 5)^2$
- $7d^2$
- $|x + 5|$

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Worksheet 11.5

1. -2.4

2. -1.1

3. -0.2

4. 1.9

5. 4.2

6. 0.6

7. 3.9

8. -3

9. 2

10. 1.2

11. -1.8

12. 3.4

13. $2x$

14. $x+1$

15. $2p$

16. $-V$

17. $-2T$

18. $Z - 1$

19. $-P$

20. $-R$

21. $2B$

22. $2C$

23. $1 - S$

24. $1 - Z$

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Worksheet 10.5

17. 12

38. -548.3166

18. $3x$

39. 8810.5863

19. -1

40. 8.7183

20. $-2y$

41. 18.0855

21. $x < 2.1972$

42. 145.4132

22. -3.4340

43. 36.7493

23. 0.0953

44. 14.8097

24. 1.7579

25. 0.6931

26. $x \geq 0.1823$

27. 2.7081

28. $x > -0.4055$

29. 0.6931

30. -0.4024

31. 3.5835

32. 0.4970

33. 1.9945

34. 1.2036

35. 0

36. $x \leq -0.6931$

37. 5.0214

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Worksheet 10.6

1. about 11.7 years
2. about 7.5 hours
3. about 0.02166
4. about 7.2 years
5. about 8 years
6. about 0.1216
7. about 50,000 years
8. about 4.4 years
9. about 12 months
10. about 45.4%