Practice 8-4

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Mixed Exercises

Write each expression as an integer or a simple fraction.

1. 16^0

2. 4^{-2}

3. 3^{-3}

4. 8^{-4}

5. $\dfrac{1}{2^{-5}}$

6. $\dfrac{4}{4^{-3}}$

7. $\dfrac{3}{6^{-1}}$

8. $\dfrac{1}{2^{-5}}$

9. $3 \cdot 8^0$

10. $16 \cdot 2^{-2}$

11. 12^{-1}

12. -7^{-2}

13. $16 \cdot 4^0$

14. 9^0

15. $\dfrac{32^{-1}}{8^{-1}}$

16. $\dfrac{9}{2^{-1}}$

17. $\dfrac{8^{-2}}{4^0}$

18. $\dfrac{9^{-1}}{3^{-2}}$

19. $5(-6)^0$

20. 3.7^0

21. $(-9)^{-2}$

22. $(-4.9)^0$

23. $-6 \cdot 3^{-4}$

24. $\dfrac{7^{-2}}{4^{-1}}$

Evaluate each expression for $m = 4, n = 5$, and $p = -2$.

25. m^p

26. n^m

27. p^p

28. n^p

29. $m^p n$

30. m^{-n}

31. p^{-n}

32. mn^p

33. p^{-m}

34. $\dfrac{m}{n^p}$

35. $\dfrac{1}{n^{-m}}$

36. $-n^{-m}$

Rewrite each expression so that all exponents are positive.

37. x^{-8}

38. xy^{-3}

39. $a^{-5}b$

40. $m^2 n^{-9}$

41. $\dfrac{1}{x^{-7}}$

42. $\dfrac{3}{a^{-4}}$

43. $\dfrac{5}{d^{-3}}$

44. $\dfrac{6}{r^{-5}s^{-1}}$

45. $3x^{-6}y^{-5}$

46. $8a^{-3}b^2c^{-2}$

47. $15s^{-9}t^{-1}$

48. $-7p^{-5}q^{-3}r^2$

49. $\dfrac{d^{-4}}{e^{-7}}$

50. $\dfrac{3m^{-4}}{n^{-8}}$

51. $\dfrac{6m^{-8}n}{p^{-1}}$

52. $\dfrac{a^{-2}b^{-1}}{cd^{-3}}$

Use a graphing calculator to graph each function over the domain $\{-2 \le x \le 2\}$.

53. $y = 2^x$

54. $y = -2^x$

55. $y = \left(\dfrac{1}{2}\right)^x$

56. $y = -\left(\dfrac{1}{2}\right)^x$

57. $y = 2 \cdot 4^x$

58. $y = \dfrac{1}{2} \cdot 4^x$

59. $y = -\left(\dfrac{3}{4}\right)^x$

60. $y = -3 \cdot 2^x$

61. $y = (1.1)^x$

62. $y = \dfrac{3}{4} \cdot 3^x$

63. $y = -2 \cdot 3^x$

64. $y = -4\left(\dfrac{1}{2}\right)^x$

65. $y = 2(3.5)^x$

66. $y = \left(\dfrac{2}{5}\right)^x$

67. $y = 5(0.5)^x$

68. $y = 7\left(\dfrac{1}{4}\right)^x$

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