

## Radicals

Write each of the following in simplified radical form.

1.  $\sqrt{20}$

2.  $\sqrt{72}$

3.  $\sqrt{98}$

4.  $\sqrt{x^3}$

5.  $\sqrt{x^5 y^2}$

6.  $\sqrt{x^7 y^5 z^{11}}$

7.  $\sqrt{18x^{11}}$

8.  $\sqrt{75y^4 z^7}$

9.  $\sqrt{153xy^6}$

10.  $\sqrt[3]{24}$

11.  $\sqrt[3]{250}$

12.  $\sqrt[3]{1080}$

13.  $\sqrt[3]{x^6}$

14.  $\sqrt[3]{x^7 y^3}$

15.  $\sqrt[3]{x^8 y^4 z^7}$

16.  $\sqrt[4]{405}$

17.  $\sqrt[4]{30000}$

18.  $\sqrt[4]{4275}$

19.  $\sqrt[4]{x^4}$

20.  $\sqrt[4]{x^7 y^{12}}$

21.  $\sqrt[4]{x^6 y^{11} z^3}$

22.  $\sqrt[5]{288}$

23.  $\sqrt[5]{1701}$

24.  $\sqrt[5]{6144}$

25.  $\sqrt[5]{x^{15}}$

26.  $\sqrt[5]{x^9 y^{12}}$

27.  $\sqrt[5]{x^{13} y^{10} z^7}$

28.  $\sqrt[6]{192x^7}$

29.  $\sqrt[6]{5832x^9}$

30.  $\sqrt[6]{x^5 y^{11} z^{15}}$

31.  $\sqrt[7]{4374x^7}$

32.  $\sqrt[7]{x^{17} y^{14}}$

33.  $\sqrt[7]{x^{10} y^{22} z^{18}}$

34.  $\sqrt[8]{64x^{12}}$

35.  $\sqrt[8]{x^{11} y^{21}}$

36.  $\sqrt[8]{x^{17} y^{20} z^{33}}$

37.  $\frac{1}{\sqrt{5}}$

38.  $\frac{1}{\sqrt{x}}$

39.  $\frac{1}{\sqrt{3x}}$

40.  $\frac{1}{\sqrt{25x^3}}$

41.  $\frac{1}{\sqrt{8x^5 y}}$

42.  $\frac{1}{\sqrt{32x^7 y^3}}$

43.  $\frac{6}{\sqrt{12x^2}}$

44.  $\frac{1}{\sqrt[3]{3}}$

45.  $\frac{1}{\sqrt[3]{25x}}$

46.  $\frac{1}{\sqrt[3]{27x^2y}}$

47.  $\frac{1}{\sqrt[3]{4x^5y^2}}$

48.  $\frac{1}{\sqrt[3]{50x^7y^4z^2}}$

49.  $\frac{1}{\sqrt[4]{x^3}}$

50.  $\frac{1}{\sqrt[4]{6x^5}}$

51.  $\frac{1}{\sqrt[4]{25xy^5}}$

52.  $\frac{1}{\sqrt[4]{7x^2y^6z^{11}}}$

53.  $\frac{1}{\sqrt[5]{x^3}}$

54.  $\frac{1}{\sqrt[5]{8x^4}}$

55.  $\frac{1}{\sqrt[5]{x^7y^2}}$

56.  $\frac{1}{\sqrt[5]{x^{17}y^{11}}}$

57.  $\frac{1}{\sqrt[5]{x^{13}y^{18}z^{20}}}$

58.  $\frac{1}{\sqrt[6]{32x^2}}$

59.  $\frac{1}{\sqrt[6]{x^4y^7}}$

60.  $\frac{1}{\sqrt[6]{x^{14}y^{10}}}$

61.  $\frac{1}{\sqrt[6]{x^{12}y^5z^{17}}}$

62.  $\frac{1}{\sqrt[7]{x^2y^{11}}}$

63.  $\frac{1}{\sqrt[8]{x^6y^{11}z^{12}}}$

64.  $(x^3y^5)^{\frac{1}{2}}$

65.  $(x^7y^{11}z)^{\frac{1}{2}}$

66.  $(x^4y^7)^{\frac{1}{3}}$

67.  $(x^{11}y^9z^5)^{\frac{1}{3}}$

68.  $(x^6y^4)^{\frac{1}{4}}$

69.  $(x^{12}y^7z^9)^{\frac{1}{4}}$

70.  $(x^{13}y^6)^{\frac{1}{5}}$

71.  $(x^{16}y^{24}z^{11})^{\frac{1}{5}}$

72.  $(x^{11}y^4z^9)^{\frac{1}{6}}$

73.  $\frac{1}{(x^3y^2)^{\frac{1}{2}}}$

74.  $\frac{1}{(x^7y^5z)^{\frac{1}{2}}}$

75.  $\frac{1}{(x^3y^5)^{\frac{1}{3}}}$

76.  $\frac{1}{(x^7y^6)^{\frac{1}{3}}}$

77.  $\frac{1}{(x^3y^2z)^{\frac{1}{4}}}$

78.  $\frac{1}{(x^7y^3z^6)^{\frac{1}{4}}}$

79.  $\frac{1}{(x^2y^3z^4)^{\frac{1}{5}}}$

80.  $\frac{1}{(x^7y^6z^8)^{\frac{1}{5}}}$

81.  $\frac{1}{(x^{17}y^9z^{12})^{\frac{1}{5}}}$

82.  $\frac{1}{(x^7y^3z^6)^{\frac{1}{6}}}$

83.  $\frac{1}{(x^{11}y^2z^3)^{\frac{1}{6}}}$

84.  $\frac{1}{(x^5y^{13}z^{16})^{\frac{1}{7}}}$