Name _____ Class _____ Date _____

# Practice 11-1

## Simplifying Radicals

**Simplify each radical expression.**

1. $\sqrt{32}$
2. $\sqrt{22} \cdot \sqrt{8}$
3. $\sqrt{147}$
4. $\sqrt{\frac{17}{144}}$
5. $\sqrt{a^2b^5}$
6. $\frac{2}{\sqrt{6}}$
7. $\sqrt{80}$
8. $\sqrt{27}$
9. $\frac{\sqrt{256}}{\sqrt{32}}$
10. $\frac{8}{\sqrt{7}}$
11. $\sqrt{12x^4}$
12. $\frac{\sqrt{96}}{\sqrt{12}}$
13. $\sqrt{200}$
14. $\sqrt{\frac{12}{225}}$
15. $\sqrt{15} \cdot \sqrt{6}$
16. $\sqrt{120}$
17. $\frac{4}{\sqrt{2a}}$
18. $\left(3\sqrt{2}\right)^3$
19. $\sqrt{250}$
20. $\frac{\sqrt{65}}{\sqrt{13}}$
21. $\sqrt{84}$
22. $\sqrt{\frac{18}{225}}$
23. $\sqrt{48s^3}$
24. $3\sqrt{24}$
25. $\sqrt{15} \cdot \sqrt{35}$
26. $\sqrt{160}$
27. $\frac{6}{\sqrt{3}}$
28. $\frac{\sqrt{48n^6}}{\sqrt{6n^3}}$
29. $\sqrt{136}$
30. $\sqrt{\frac{27x^2}{256}}$
31. $\sqrt{m^3n^2}$
32. $\frac{\sqrt{180}}{\sqrt{9}}$
33. $\sqrt{18} \cdot \sqrt{8}$
34. $\left(10\sqrt{3}\right)^2$
35. $\sqrt{\frac{17}{64}}$
36. $\sqrt{50}$
37. $\sqrt{48}$
38. $\sqrt{20}$
39. $\sqrt{8}$
40. $\sqrt{25x^2}$
41. $\sqrt{\frac{7}{9}}$
42. $\sqrt{\frac{17}{64}}$
43. $\frac{\sqrt{48}}{\sqrt{8}}$
44. $\frac{\sqrt{120}}{\sqrt{10}}$
45. $\frac{5}{\sqrt{2}}$
46. $\sqrt{75}$
47. $\sqrt{300}$
48. $\sqrt{49a^3}$
49. $\sqrt{125}$
50. $\sqrt{28x^4}$
51. $\frac{7}{\sqrt{3}}$
52. $\sqrt{\frac{15}{49}}$
53. $\frac{\sqrt{60}}{\sqrt{12}}$
54. $\frac{3}{\sqrt{3}}$
55. $\frac{4}{\sqrt{8}}$
56. $\sqrt{72x^3}$
57. $\sqrt{50y^3}$
58. $\sqrt{45x^2y^3}$
59. $\sqrt{\frac{44x^3}{9x}}$
60. $\frac{\sqrt{4}}{\sqrt{3x}}$
61. $6\sqrt{20}$
62. $\sqrt{ab^3}$
63. $\sqrt{a^5b^6}$
64. $12\sqrt{60x^2}$
65. $\left(2\sqrt{3}\right)^2$
66. $\sqrt{12} \cdot \sqrt{27}$
67. $\left(7\sqrt{5}\right)^2$
68. $\sqrt{14} \cdot \sqrt{8}$
69. $\left(5\sqrt{5}\right)^2$
70. $\sqrt{8x^6y^7}$
71. $\sqrt{16a^3} \cdot \sqrt{5a^2}$
72. $\sqrt{8} \cdot \sqrt{7}$
73. $\sqrt{3x} \cdot \sqrt{5x}$
74. $2\sqrt{5} \cdot 2\sqrt{5}$
75. $4\sqrt{3} \cdot 2\sqrt{2}$
76. $6\sqrt{3} \cdot 7\sqrt{8}$
77. $\frac{10}{\sqrt{x}}$
78. $\frac{\sqrt{9}}{\sqrt{2x}}$
79. $\frac{4}{\sqrt{20}}$
80. $\frac{\sqrt{12x}}{\sqrt{27x}}$
81. $\frac{3\sqrt{7}}{\sqrt{20x}}$
82. $\frac{4\sqrt{5}}{\sqrt{8y}}$