Simplifying Radicals

Simplify each of the following perfect square roots.

1. $\sqrt{49} = 7$
2. $\sqrt{4} = 2$
3. $\sqrt{100} = 10$
4. $\sqrt{16} = 4$
5. $\sqrt{1} = 1$
6. $\sqrt{36} = 6$
7. $\sqrt{64} = 8$
8. $\sqrt{144} = 12$
9. $\sqrt{25} = 5$
10. $\sqrt{9} = 3$
11. $\sqrt{81} = 9$
12. $\sqrt{225} = 15$
13. $\sqrt{a^2} = |a|$
14. $\sqrt{b^4} = b^2$
15. $\sqrt{x^4y^8} = x^2y^4$
16. $\sqrt{121g^6f^2} = 11|g^3f|$
17. $\sqrt{81a^2b^4} = 9ab^2$
18. $\sqrt{100m^{10}n^{12}} = 10m^5n^6$
19. $\sqrt{36r^4t^6} = 6r^2|t^3|$
20. $\sqrt{169a^{16}b^4} = 13a^8b^2$
21. $\sqrt{\frac{25}{36}} = \frac{5}{6}$
22. $\sqrt{\frac{100}{81}} = \frac{10}{9}$
23. $\sqrt{\frac{9}{49}} = \frac{3}{7}$
24. $\sqrt{\frac{1}{4}} = \frac{1}{2}$

Simplify each of the following square roots.

25. $\sqrt{8} = 2\sqrt{2}$
26. $\sqrt{12} = 2\sqrt{3}$
27. $\sqrt{18} = 3\sqrt{2}$
28. $\sqrt{20} = 2\sqrt{5}$
29. $\sqrt{24} = 2\sqrt{6}$
30. $\sqrt{28} = 2\sqrt{7}$
31. $\sqrt{32} = 4\sqrt{2}$
32. $\sqrt{40} = 2\sqrt{10}$
33. $\sqrt{44} = 2\sqrt{11}$
34. $\sqrt{48} = 4\sqrt{3}$
35. $\sqrt{50} = 5\sqrt{2}$
36. $\sqrt{52} = 2\sqrt{13}$
37. $\sqrt{56} = 2\sqrt{14}$
38. $\sqrt{60} = 2\sqrt{15}$
39. $\sqrt{68} = 2\sqrt{17}$
40. $\sqrt{90} = 3\sqrt{10}$
41. $\sqrt{20x^3y^4} = 2xy^2\sqrt{5xy}$
42. $\sqrt{27a^2b^4} = 3ab^2\sqrt{3}$
43. $\sqrt{50x^3y^2}$ $5xy\sqrt{2x}$
44. $\sqrt{88g^5h^3} = 2g^2h\sqrt{22gh}$
45. $\sqrt{72m^4n^5} = 6m^2n^2\sqrt{2n}$ 6
46. $\sqrt{300r^5m^7} = 10r^2m^3\sqrt{3rm}$
47. $\sqrt{8g^6h^9} = 2g^3h^4\sqrt{2h}$
48. $\sqrt{12c^4d^5h^6} = 2c^2d^2h^3\sqrt{3d}$
49. $2\sqrt{98x^9y}$ $2\cdot 7x^4\sqrt{2xy}$ $14x^4\sqrt{2xy}$
50. $3m\sqrt{300p^7m^6}$ $3m\cdot 10p^3m^3\sqrt{3p}$ $30pm^4\sqrt{3p}$
51. $4k^2\sqrt{9k^8b^{11}}$ $4k^2\cdot 3k^4b^5\sqrt{b}$ $12k^6b^5\sqrt{b}$
52. $ch^3\sqrt{30c^6d^8h^2}$ $ch^3\cdot c^3d^4h\sqrt{30}$ $c^4d^4h^4\sqrt{30}$