

Simplifying Radicals

1. $\sqrt{250}$
2. $4\sqrt{27}$
3. $3\sqrt{50a^5b^6}$
4. $7\sqrt{8d^7}$
5. $\sqrt{108x^2y^3z}$

Adding / Subtracting Radicals

6. $2\sqrt{12} + 5\sqrt{18} - 4\sqrt{8} - 2\sqrt{27}$
7. $4\sqrt{75} + 5\sqrt{125} - 3\sqrt{48} - 2\sqrt{80}$
8. $9\sqrt{20} - 3\sqrt{24} - 5\sqrt{42} - 11\sqrt{72}$
9. $9\sqrt{8} + 7\sqrt{50} - 4\sqrt{45} - 2\sqrt{98}$

Multiplying Radicals

10. $2\sqrt{6}(3\sqrt{2} - 4)$
11. $\sqrt{5}(2\sqrt{15} - \sqrt{10})$
12. $4\sqrt{10}(3\sqrt{8} - \sqrt{10})$
13. $(2\sqrt{3} - 4\sqrt{5})(2\sqrt{3} + 4\sqrt{5})$
14. $(5\sqrt{2} - 3\sqrt{6})(5\sqrt{2} + 3\sqrt{6})$
15. $(\sqrt{8} - 5\sqrt{6})(2\sqrt{2} + 3\sqrt{4})$
16. $(3\sqrt{12} - 2\sqrt{5})(4\sqrt{6} - 3\sqrt{10})$

Rationalizing Denominators

17. $\sqrt{\frac{3}{7}}$
18. $\frac{2\sqrt{3}}{\sqrt{5}}$
19. $\sqrt{\frac{3}{7}} \cdot \sqrt{\frac{14}{5}}$
20. $\sqrt{\frac{3x^3y^2}{7xy^2}}$
21. $\frac{2\sqrt{3} + \sqrt{5}}{\sqrt{6}}$
22. $\frac{5\sqrt{2} - 15\sqrt{5}}{20\sqrt{3}}$
23. $\frac{3\sqrt{6} - 7\sqrt{2}}{2\sqrt{12}}$

Using Conjugates

24. $\frac{2}{4 + \sqrt{3}}$
25. $\frac{3\sqrt{2}}{5 - 3\sqrt{3}}$
26. $\frac{4\sqrt{3}}{2 - \sqrt{5}}$
27. $\frac{3\sqrt{2} + 5}{2 - 3\sqrt{2}}$
28. $\frac{5\sqrt{3} + 2}{4 - \sqrt{6}}$