

Operations on Radicals (For use after Section 11-8)
 Write each as a decimal rounded to the nearest hundredth.

Express in simplest form. Assume that all variables represent positive real numbers.

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| 1. $\sqrt{6} \cdot 3\sqrt{6}$ <u>18</u> | 2. $\sqrt{5} \cdot \sqrt{6} \cdot \sqrt{10}$ <u>17.32</u> |
| 3. $2\sqrt{3} \cdot \sqrt{6}$ <u>8.49</u> | 4. $\sqrt{3} \cdot \sqrt{27}$ <u>9</u> |
| 5. $\sqrt{3} \cdot \sqrt{12} \cdot \sqrt{50}$ <u>42.43</u> | 6. $\sqrt{5} \cdot \sqrt{\frac{3}{5}}$ <u>1.73</u> |
| 7. $\sqrt{\frac{8}{11}} \cdot \sqrt{\frac{11}{8}}$ <u>1</u> | 8. $\sqrt{\frac{8}{11}} \cdot \sqrt{22}$ <u>4</u> |
| 9. $\frac{2\sqrt{5}}{\sqrt{50}}$ <u>0.63</u> | 10. $\frac{\sqrt{3}}{\sqrt{18}}$ <u>0.41</u> |
| 11. $\frac{5\sqrt{45}}{\sqrt{15}}$ <u>8.66</u> | 12. $\frac{3\sqrt{27}}{4\sqrt{3}}$ <u>2.25</u> |
| 13. $\sqrt{\frac{50}{4}}$ <u>3.54</u> | 14. $\frac{8\sqrt{405}}{\sqrt{5}}$ <u>72</u> |
| 17. $8\sqrt{5} - 3\sqrt{5}$ <u>11.18</u> | 18. $2\sqrt{6} - 3\sqrt{6}$ <u>-2.45</u> |
| 19. $\frac{1}{2}\sqrt{5} + \frac{1}{4}\sqrt{20}$ <u>2.24</u> | 20. $\sqrt{28} - \sqrt{7}$ <u>2.65</u> |
| 21. $\sqrt{90} - \sqrt{40}$ <u>3.16</u> | 22. $\sqrt{8} + \sqrt{\frac{1}{2}}$ <u>3.54</u> |
| 23. $3\sqrt{28} + \sqrt{63}$ <u>23.81</u> | 24. $\sqrt{75} - 2\sqrt{27} + \sqrt{48}$ <u>5.20</u> |
| 25. $3\sqrt{\frac{9}{10}} - \sqrt{10}$ <u>-0.32</u> | 26. $\sqrt{x^6} + \sqrt{x^4}$ <u>$x^3 + x^2$</u> |
| 27. $3\sqrt{2}(\sqrt{8} - \sqrt{32})$ <u>-12</u> | 28. $\sqrt{\frac{x^2}{a^2} - \frac{x^2}{b^2}}$ <u>SKIP</u> |
| 1. $(\sqrt{3} + 4)(\sqrt{3} - 4)$ <u>-13</u> | 2. $(8 - \sqrt{2})(8 + \sqrt{2})$ <u>62</u> |
| 3. $(\sqrt{5} + \sqrt{6})(\sqrt{5} - \sqrt{6})$ <u>-1</u> | 4. $(\sqrt{3} - 4)^2$ <u>5.14</u> |
| 5. $(8 + \sqrt{2})^2$ <u>88.63</u> | 6. $(\sqrt{5} + \sqrt{6})^2$ <u>21.95</u> |
| 7. $(2\sqrt{3} + 4)(5\sqrt{7} + 7)$ <u>150.99</u> | 8. $2\sqrt{3}(5\sqrt{6} - 3)$ <u>32.03</u> |
| 9. $\frac{5}{\sqrt{3} + 4}$ <u>0.87</u> | 10. $\frac{\sqrt{5}}{\sqrt{3} - 4}$ <u>-0.99</u> |
| 11. $\frac{4}{8 - \sqrt{2}}$ <u>0.61</u> | 12. $\frac{4}{\sqrt{2} - 8}$ <u>-0.61</u> |
| 13. $\frac{6}{2\sqrt{3} + 3}$ <u>0.93</u> | 14. $\frac{2 + \sqrt{5}}{2 - \sqrt{5}}$ <u>-17.94</u> |