**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_Per:\_\_\_\_\_\_**

**11.2: Adding and Subtracting Radicals**

**Worksheet 649**

**Simplify.**

**1.** $2\sqrt{5}+4\sqrt{5}$ **2.** $\sqrt{6}-4\sqrt{6}$ **3.** $\sqrt{8}-\sqrt{2}$

**4.** $3\sqrt{75}+2\sqrt{5}$ **5.** $\sqrt{20}+2\sqrt{5}-3\sqrt{5}$ **6.** $2\sqrt{3}+\sqrt{6}-5\sqrt{3}$

**7.** $\sqrt{12}+2\sqrt{3}-5\sqrt{3}$ **8.** $3\sqrt{6}+3\sqrt{2}-\sqrt{50}+\sqrt{24}$

**9.** $\sqrt{8a}-\sqrt{2a}+5\sqrt{2a}$ **10.** $\sqrt{54}+\sqrt{24}$ **11.** $\sqrt{3}+\sqrt{\frac{1}{3}}$

**12.** $\sqrt{12}+\sqrt{\frac{1}{3}}$ **13.** $\sqrt{80}-\sqrt{20}+\sqrt{180}$ **14.** $\sqrt{54}-\sqrt{\frac{1}{6}}$

**15.** $\sqrt{50}+\sqrt{18}-\sqrt{75}+\sqrt{27}$ **16.** $2\sqrt{3}-4\sqrt{45}+2\sqrt{\frac{1}{3}}$

**17.** $\sqrt{125}-2\sqrt{\frac{1}{5}}+\sqrt{\frac{1}{3}}$ **18.** $\sqrt{\frac{2}{3}}+3\sqrt{3}-4\sqrt{\frac{1}{12}}$

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_Per:\_\_\_\_\_\_**

**11.2: Multiplying Radicals**

**Worksheet 650**

**Simplify.**

**1.** $2\left(\sqrt{3}+4\sqrt{5}\right)$ **2.** $\sqrt{6}\left(\sqrt{3}-2\sqrt{6}\right)$ **3.** $\sqrt{5}\left(\sqrt{5}-\sqrt{2}\right)$

**4.** $\sqrt{2}\left(3\sqrt{7}+2\sqrt{5}\right)$ **5.** $\left(2-4\sqrt{2}\right)\left(2+4\sqrt{2}\right)$ **6.** $\left(3+\sqrt{6}\right)^{2}$

**7.** $\left(2-2\sqrt{5}\right)^{2}$ **8.** $3\sqrt{2}\left(\sqrt{8}+\sqrt{24}\right)$ **9.** $\sqrt{8}\left(\sqrt{2}+5\sqrt{8}\right)$

**10.** $\left(\sqrt{5}-3\sqrt{2}\right)\left(\sqrt{5}+3\sqrt{2}\right)$ **11.** $\left(\sqrt{3}+\sqrt{6}\right)^{2}$ **12.** $\left(\sqrt{2}-2\sqrt{3}\right)^{2}$

**13.** $\left(\sqrt{5}-\sqrt{2}\right)\left(\sqrt{2}+\sqrt{6}\right)$ **14.** $\left(\sqrt{8}-\sqrt{2}\right)\left(\sqrt{3}+\sqrt{6}\right)$

**15.** $\left(\sqrt{5}-\sqrt{18}\right)\left(7\sqrt{5}+\sqrt{3}\right)$ **16.** $\left(2\sqrt{3}-\sqrt{45}\right)\left(\sqrt{12}+2\sqrt{6}\right)$

**17.** $\left(2\sqrt{5}-2\sqrt{3}\right)\left(\sqrt{10}+\sqrt{6}\right)$ **18.** $\left(\sqrt{2}+3\sqrt{3}\right)\left(\sqrt{12}-4\sqrt{8}\right)$