

Roots and Radical Expressions Worksheet

Simplify

$$\boxed{1} \quad 7\sqrt{30} + 2\sqrt{75} + 5\sqrt{50}$$

$$\boxed{2} \quad (4\sqrt{5} - 3\sqrt{2})^2$$

$$\boxed{3} \quad (5 - 4\sqrt{5})(5 + 3\sqrt{5})$$

$$\boxed{4} \quad 3\sqrt{3}(4 - 3\sqrt{5})$$

$$\boxed{5} \quad (-7 + \sqrt{3x})(4 + \sqrt{3x})$$

$$\boxed{6} \quad 10\sqrt{11} - 11\sqrt{11}$$

$$\boxed{7} \quad 3\sqrt{5} - \sqrt{x} + 4\sqrt{5} + 3\sqrt{x}$$

$$\boxed{8} \quad \sqrt[3]{(x+5)^2} \cdot \sqrt[3]{(x+5)^4}$$

$$\boxed{9} \quad \sqrt{xy^3} \cdot \sqrt[3]{x^2y}$$

$$\boxed{10} \quad -3\sqrt[3]{-3} + 2\sqrt[3]{162} + 3\sqrt[3]{81}$$

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Answers

$$\boxed{1} \quad 7\sqrt{30} + 2\sqrt{75} + 5\sqrt{50}$$

$$7\sqrt{30} + 10\sqrt{3} + 25\sqrt{2}$$

$$\boxed{3} \quad (5 - 4\sqrt{5})(5 + 3\sqrt{5})$$

$$-35 - 5\sqrt{5}$$

$$\boxed{5} \quad (-7 + \sqrt{3x})(4 + \sqrt{3x})$$

$$-28 - 3\sqrt{3x}$$

$$\boxed{7} \quad 3\sqrt{5} - \sqrt{x} + 4\sqrt{5} + 3\sqrt{x}$$

$$7\sqrt{5} + 2\sqrt{x}$$

$$\boxed{9} \quad \sqrt{xy^3} \cdot \sqrt[3]{x^2y}$$

$$\sqrt{y^{11}} \sqrt{x} \sqrt[3]{x^2}$$

$$\boxed{2} \quad (4\sqrt{5} - 3\sqrt{2})^2$$

$$98 - 24\sqrt{10}$$

$$\boxed{4} \quad 3\sqrt{3}(4 - 3\sqrt{5})$$

$$12\sqrt{3} - 9\sqrt{15}$$

$$\boxed{6} \quad 10\sqrt{11} - 11\sqrt{11}$$

$$-\sqrt{11}$$

$$\boxed{8} \quad \sqrt[3]{(x+5)^2} \cdot \sqrt[3]{(x+5)^4}$$

$$\sqrt[3]{(x+5)^2} \sqrt[3]{x+5} (x+5)$$

$$\boxed{10} \quad -3\sqrt[3]{-3} + 2\sqrt[3]{162} + 3\sqrt[3]{81}$$

$$12\sqrt[3]{-3} + 6\sqrt[3]{6}$$