

Evaluating Radical Expressions Worksheet

Simplify by adding or subtracting

1) $8\sqrt{64} - \sqrt{96}$

2) $4\sqrt{x} + 6\sqrt{x} + 3\sqrt{x} + 2x$

Simplify by subtracting or multiplying

3) $\sqrt[3]{5a^2} - \sqrt[3]{2a}$

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

Simplify and rationalize the denominators

5) $\frac{2 + \sqrt{5}}{6 - \sqrt{3}}$

6) $\frac{\sqrt{7} + \sqrt{5}}{\sqrt{5} + \sqrt{2}}$

7) $\frac{3\sqrt{2} - \sqrt{7}}{4\sqrt{2} + \sqrt{5}}$

Simplify using the quotient property of radicals

8) $\sqrt{\frac{121}{25}}$

9) $\sqrt{\frac{25}{16}}$

10) $\sqrt{\frac{81}{64}}$

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Answers

1) $8\sqrt{64} - \sqrt{96}$

$$64 - 4\sqrt{6}$$

2) $4\sqrt{x} + 6\sqrt{x} + 3\sqrt{x} + 2x$

$$13\sqrt{x} + 2x$$

3) $\sqrt[3]{5a^2} - \sqrt[3]{2a}$

$$\sqrt[3]{5a^2} - \sqrt[3]{2a}$$

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

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

5) $\frac{2 + \sqrt{5}}{6 - \sqrt{3}}$

$$\frac{12 + 2\sqrt{3} + 6\sqrt{5} + \sqrt{15}}{33}$$

6) $\frac{\sqrt{7} + \sqrt{5}}{\sqrt{5} + \sqrt{2}}$

$$\frac{\sqrt{11} + 5}{3}$$

7) $\frac{3\sqrt{2} - \sqrt{7}}{4\sqrt{2} + \sqrt{5}}$

$$\frac{24 - \sqrt[3]{10} - 4\sqrt{14} + \sqrt{35}}{27}$$

8) $\sqrt{\frac{121}{25}}$

$$\frac{11}{5}$$

9) $\sqrt{\frac{25}{16}}$

$$\frac{5}{4}$$

10) $\sqrt{\frac{81}{64}}$

$$\frac{9}{8}$$