

Written Exercises

Simplify.

- A**
- $8\sqrt{3} - 6\sqrt{3}$
 - $9\sqrt{5} + 4\sqrt{5}$
 - $-13\sqrt{17} - 7\sqrt{17}$
 - $5\sqrt{80} - 12\sqrt{5}$
 - $5\sqrt{3} + 2\sqrt{75}$
 - $-2\sqrt{24} - 3\sqrt{6}$
 - $3\sqrt{32} - 4\sqrt{63}$
 - $3\sqrt{45} + 7\sqrt{36}$
 - $5\sqrt{28} - 2\sqrt{45}$
 - $-4\sqrt{75} + 3\sqrt{147}$
 - $-11\sqrt{8} - 7\sqrt{12}$
 - $\sqrt{150} - 5\sqrt{96}$
 - $9\sqrt{13} - 6\sqrt{11} + \sqrt{13}$
 - $-4\sqrt{2} + 6\sqrt{72} - 8\sqrt{32}$
 - $5\sqrt{28} + 2\sqrt{7} - \sqrt{14}$
 - $-3\sqrt{72} + 6\sqrt{52} - 7\sqrt{128}$
 - $-\sqrt{338} - \sqrt{200} + \sqrt{162}$
 - $4\sqrt{112} + 5\sqrt{56} - 9\sqrt{126}$

Sample

$$\begin{aligned}\sqrt{15} - \sqrt{\frac{3}{5}} &= \sqrt{15} - \frac{\sqrt{3}}{\sqrt{5}} \\ &= \sqrt{15} - \frac{\sqrt{3}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} \\ &= \sqrt{15} - \frac{\sqrt{15}}{5} \\ &= \frac{5\sqrt{15} - \sqrt{15}}{5} \\ &= \frac{4\sqrt{15}}{5} \quad \text{Answer}\end{aligned}$$

- B**
- $\sqrt{55} - 7\sqrt{\frac{5}{11}}$
 - $3\sqrt{18} + \sqrt{\frac{2}{25}}$
 - $\sqrt{\frac{5}{11}} - \sqrt{\frac{11}{5}}$
 - $4\sqrt{\frac{5}{6}} - \sqrt{\frac{3}{10}}$
 - $3\sqrt{3} - 2\sqrt{12} + 4\sqrt{\frac{1}{3}}$
 - $8\sqrt{10} - 3\sqrt{40} + 5\sqrt{\frac{1}{10}}$
 - $2\sqrt{\frac{7}{2}} + 4\sqrt{\frac{7}{8}} - \frac{1}{2}\sqrt{98}$
 - $3\sqrt{\frac{5}{12}} + \sqrt{\frac{12}{5}} - \frac{1}{3}\sqrt{60}$
 - $5\sqrt{3}(\sqrt{6} + 2\sqrt{8})$
 - $5\sqrt{2}(4\sqrt{8} - 2\sqrt{12})$
 - $\sqrt{3} - \sqrt{\frac{1}{3}}$
 - $2\sqrt{75} + \sqrt{\frac{3}{16}}$
 - $\sqrt{\frac{2}{7}} - \sqrt{\frac{7}{2}}$
 - $5\sqrt{\frac{16}{3}} - \sqrt{\frac{9}{2}}$

Simplify. Assume that all variables represent positive real numbers.

- C**
- $2\sqrt{49x^3} - 3\sqrt{16x^5}$
 - $4\sqrt{72s^4} - 2s\sqrt{200s^2}$
 - $\sqrt{\frac{x^2}{16} + \frac{x^2}{25}}$
 - $\sqrt{\frac{x^2}{49} - \frac{x^2}{121}}$
 - $\sqrt{\frac{x^2}{a^2} + \frac{x^2}{b^2}}$
 - $\sqrt{\frac{x}{a}} - \sqrt{\frac{a}{x}}$