

Simplifying Square-Root Expressions

Simplify each expression

1. $\sqrt{24}$

$$\begin{array}{c} \wedge \\ \sqrt{4} \sqrt{6} \\ \wedge \\ \textcircled{2 \ 2} \\ 2\sqrt{6} \end{array}$$

2. $\sqrt{45}$

$$\begin{array}{c} \wedge \\ \sqrt{9} \sqrt{5} \\ \wedge \\ \textcircled{3 \ 3} \\ 3\sqrt{5} \end{array}$$

3. $2\sqrt{50}$

$$\begin{array}{c} \wedge \\ \sqrt{25} \sqrt{2} \\ \wedge \\ \textcircled{5 \ 5} \\ \boxed{2} \cdot 5\sqrt{2} \\ 10\sqrt{2} \end{array}$$

4. $\boxed{11}\sqrt{12}$

$$\begin{array}{c} \wedge \\ \sqrt{4} \sqrt{3} \\ \wedge \\ \textcircled{2 \ 2} \\ \boxed{11} \cdot 2\sqrt{3} \\ 22\sqrt{3} \end{array}$$

5. $\sqrt{26}$

$$\begin{array}{c} \sqrt{26} \\ \uparrow \\ \text{simplest} \\ \text{form} \end{array}$$

6. $\sqrt{88}$

$$\begin{array}{c} \wedge \\ \sqrt{4} \sqrt{22} \\ \wedge \\ \textcircled{2 \ 2} \quad 2\sqrt{22} \end{array}$$

Are the terms like radicals? Simplify.

7. $2\sqrt{7} + 4\sqrt{7}$

$$\underline{\quad} \quad \underline{\quad} \\ 6\sqrt{7}$$

8. $4\sqrt{13} + 13\sqrt{13}$

$$17\sqrt{13}$$

9. $12\sqrt{2} - 4\sqrt{11}$

no like terms

Practice with your table:

10. $\sqrt{48}$

$$\sqrt{16} \sqrt{3}$$
$$\textcircled{4 \ 4} \quad 4\sqrt{3}$$

11. $\sqrt{84}$

$$\sqrt{4} \sqrt{21}$$
$$\textcircled{2 \ 2} \quad 2\sqrt{21}$$

12. $\sqrt{90}$

$$\sqrt{9} \sqrt{10}$$
$$\textcircled{3 \ 3} \quad 3\sqrt{10}$$

13. $2\sqrt{200}$

$$\sqrt{100} \sqrt{2}$$
$$\textcircled{10 \ 10} \quad 2 \cdot 10\sqrt{2}$$
$$20\sqrt{2}$$

14. $5\sqrt{169}$

$$\textcircled{13 \ 13}$$
$$5 \cdot 13 = 65$$

15. $\sqrt{224}$

$$\sqrt{16} \sqrt{14}$$
$$\textcircled{4 \ 4} \quad 4\sqrt{14}$$

Simplify

16. $9\sqrt{y} - \sqrt{y}$

$$8\sqrt{y}$$

17. $-8\sqrt{3d} + 6\sqrt{2d} + 10\sqrt{3d}$

$$2\sqrt{3d} + 6\sqrt{2d}$$