

HW 3.4

pp. 144

2 – 24 even



Simplify the expression.

2. $\sqrt{45}$

$$\sqrt{9 \cdot 5}$$

$$\sqrt{9} \cdot \sqrt{5}$$

$$3\sqrt{5}$$

4. $\sqrt{400d}$

$$\sqrt{4 \cdot 100d}$$

$$\sqrt{4} \cdot \sqrt{100} \cdot \sqrt{d}$$

$$2 \cdot 10 \cdot \sqrt{d}$$

$$20\sqrt{d}$$

6. $\sqrt{25n^3}$

$$\sqrt{25 \cdot n^2 \cdot n}$$

$$\sqrt{25} \cdot \sqrt{n^2} \cdot \sqrt{n}$$

$$5 \cdot n \cdot \sqrt{n}$$

$$5n\sqrt{n}$$



$$8. \sqrt{20} \cdot \sqrt{15}$$

$$\sqrt{20 \cdot 15}$$

$$\sqrt{300}$$

$$\sqrt{100 \cdot 3}$$

$$\sqrt{100} \cdot \sqrt{3}$$

$$10\sqrt{3}$$

$$10. \sqrt{\frac{16}{81}}$$

$$\frac{\sqrt{16}}{\sqrt{81}}$$

$$\frac{4}{9}$$

$$12. \sqrt{\frac{x^2}{144}}$$

$$\frac{\sqrt{x^2}}{\sqrt{144}}$$

$$\frac{x}{12}$$



Simplify the expression by rationalizing the denominator.

$$14. \frac{2}{\sqrt{p}} \cdot \frac{\sqrt{p}}{\sqrt{p}}$$

$$\frac{2\sqrt{p}}{\sqrt{p}\sqrt{p}}$$

$$\frac{2\sqrt{p}}{\sqrt{p^2}}$$

$$\frac{2\sqrt{p}}{p}$$

$$16. \frac{1}{5 + \sqrt{3}} \cdot \frac{5 - \sqrt{3}}{5 - \sqrt{3}}$$

$$= \frac{1(5 - \sqrt{3})}{(5 + \sqrt{3})(5 - \sqrt{3})}$$

$$= \frac{5 - \sqrt{3}}{25 - 5\sqrt{3} + 5\sqrt{3} - \sqrt{3} \cdot 3}$$

$$= \frac{5 - \sqrt{3}}{25 - 3}$$

$$= \frac{5 - \sqrt{3}}{22}$$



$$18. \frac{9}{7 - \sqrt{2}} \cdot \frac{7 + \sqrt{2}}{7 + \sqrt{2}}$$

$$= \frac{9(7 + \sqrt{2})}{(7 - \sqrt{2})(7 + \sqrt{2})}$$

$$= \frac{63 + 9\sqrt{2}}{49 + 7\sqrt{2} - 7\sqrt{2} - \sqrt{2} \cdot 2}$$

$$= \frac{63 + 9\sqrt{2}}{49 - 2}$$

$$= \frac{63 + 9\sqrt{2}}{47}$$

$$20. 4\sqrt{5} - 7\sqrt{5} \\ - 3\sqrt{5}$$



$$22. \sqrt{5}(8\sqrt{10} + 1)$$

$$\sqrt{5} \cdot 8\sqrt{10} + \sqrt{5} \cdot 1$$

$$8\sqrt{10 \cdot 5} + \sqrt{5}$$

$$8\sqrt{2 \cdot 5 \cdot 5} + \sqrt{5}$$

$$8 \cdot 5\sqrt{2} + \sqrt{5}$$

$$40\sqrt{2} + \sqrt{5}$$

$$24. (6 + \sqrt{3})(6 - \sqrt{3})$$

$$6 \cdot 6 - 6\sqrt{3} + 6\sqrt{3} - \sqrt{3} \cdot 3$$

$$36 - \sqrt{9}$$

$$36 - 3$$

$$33$$

