

2, 3, 5, 7, 11, 13

Worked Examples - Simplify Radical Expressions (IXL Algebra 1 EE.1)

1. Simplify $\sqrt{125}$

$$\begin{aligned} &\sqrt{5 \cdot 5 \cdot 5} \\ &\sqrt{5^2 \cdot 5} \\ &\boxed{5\sqrt{5}} \end{aligned}$$

5	125
5	25
5	5
	1

2. Simplify $10\sqrt{12}$

$$10\sqrt{2 \cdot 2 \cdot 3}$$

$$10\sqrt{2^2 \cdot 3}$$

$$10\sqrt{2^2} \cdot \sqrt{3}$$

$$10 \cdot 2 \cdot \sqrt{3} \rightarrow \boxed{20\sqrt{3}}$$

2	12
2	6
3	3
	1

3. Simplify $5\sqrt{45}$

$$5\sqrt{5 \cdot 3 \cdot 3}$$

$$5\sqrt{3 \cdot 3 \cdot 5}$$

$$5\sqrt{3^2 \cdot 5}$$

$$5 \cdot \sqrt{3^2} \cdot \sqrt{5} \rightarrow 5 \cdot 3 \cdot \sqrt{5}$$

$$\boxed{15\sqrt{5}}$$

5	45
3	9
3	3
	1

4. Simplify $10\sqrt{63}$

$$10\sqrt{3 \cdot 3 \cdot 7}$$

$$10\sqrt{3^2 \cdot 7}$$

$$10 \cdot 3 \cdot \sqrt{7}$$

$$\boxed{30\sqrt{7}}$$

3	63
3	21
7	7
	1

5. Simplify $2\sqrt{308}$

$$2\sqrt{2 \cdot 2 \cdot 7 \cdot 11}$$

$$2\sqrt{2^2 \cdot 7 \cdot 11}$$

$$2\sqrt{2^2} \cdot \sqrt{7 \cdot 11}$$

$$2 \cdot 2 \cdot \sqrt{7 \cdot 11}$$

$$\boxed{4\sqrt{77}}$$

2	308
2	154
7	77
11	11
	1

