

Match the root part

Add or subtract only after simplifying

Treat a shared $\sqrt{r}$ like a shared variable.

Keep unlike root parts separate.

1. SIMPLIFY EACH ROOT

Your exact step / reason: _____

2. MATCH ROOT PARTS

Your exact step / reason: _____

3. COMBINE COEFFICIENTS

Your exact step / reason: _____

WORKED EXAMPLE

$$\sqrt{12} + \sqrt{27} = 2\sqrt{3} + 3\sqrt{3} = 5\sqrt{3}.$$

Check: $5\sqrt{3} \approx 8.66$; $\sqrt{39}$ is only about 6.24.

TRY IT: Can $2\sqrt{3} + 2\sqrt{2}$ combine into one like surd?

Tactile / low-vision route:

Place 2 and 3 counters beside identical $\sqrt{3}$ strips.