

Multiplying and Dividing Surds

We can multiply and divide surds using the three important **laws of surds**:

$$\sqrt{m} \times \sqrt{n} = \sqrt{mn}$$

$$\sqrt{m} \times \sqrt{m} = m$$

$$\sqrt{m} \div \sqrt{n} = \sqrt{\frac{m}{n}}$$

These are derived from the laws of indices.

 Examples

$$\sqrt{5} \times \sqrt{3} = \sqrt{15}$$

$$\sqrt{18} \div \sqrt{2} = \sqrt{\frac{18}{2}} = \sqrt{9} = 3$$

If the answer isn't a surd, it should be evaluated and given as an integer.

$$\rightarrow 3\sqrt{6} \times 2\sqrt{7} = 6\sqrt{42}$$

If there are coefficients in front of the radical (square root) symbol, multiply or divide these separately.