


Syrdiau

Surds



 @mathemateg

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Syrdiau Surds

- $\sqrt{n} \times \sqrt{n} = n$
- $\sqrt[a]{n} \times \sqrt[a]{m} = \sqrt[a]{nm}$
- $\sqrt[a]{n} \div \sqrt[a]{m} = \sqrt[a]{\frac{n}{m}} = \frac{\sqrt[a]{n}}{\sqrt[a]{m}}$
- Rhesymoli'r enwadur: / Rationalising the denominator:
$$\frac{a+b\sqrt{c}}{d+e\sqrt{f}} = \left(\frac{a+b\sqrt{c}}{d+e\sqrt{f}}\right) \times \left(\frac{d-e\sqrt{f}}{d-e\sqrt{f}}\right)$$

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Enghraifft / Example:

$$\frac{5-2\sqrt{5}}{3+7\sqrt{10}}$$

$$= \left(\frac{5-2\sqrt{5}}{3+7\sqrt{10}} \right) \times \left(\frac{3-7\sqrt{10}}{3-7\sqrt{10}} \right)$$

$$= \frac{15-35\sqrt{10}-6\sqrt{5}+14\times\sqrt{5}\times\sqrt{10}}{9-21\sqrt{10}+21\sqrt{10}-49\times\sqrt{10}\times\sqrt{10}}$$

$$= \frac{15-35\sqrt{10}-6\sqrt{5}+14\times\sqrt{5}\times\sqrt{5}\times\sqrt{2}}{9-49\times 10}$$

$$= \frac{15-35\sqrt{10}-6\sqrt{5}+14\times 5\times\sqrt{2}}{-481}$$

$$= \frac{15-35\sqrt{10}-6\sqrt{5}+70\sqrt{2}}{-481}$$