Surds lesson 7 - Rationalise demoniators

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8:11 PM

Surds - Rationalising Denominators

$\frac{\sqrt{5}}{\sqrt{6}}$ vs. $\frac{\sqrt{30}}{6}$

rationalisation

$$\frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

$$\frac{\sqrt{5} \times \sqrt{6}}{\sqrt{6} \times \sqrt{6}} = \frac{\sqrt{30}}{6}$$

Express the following with a rational denominator

$$\frac{\sqrt{5}}{\sqrt{7}} = \frac{\sqrt{5} \times \sqrt{7}}{\sqrt{7} \times \sqrt{7}} = \frac{\sqrt{35}}{7}$$

$$\frac{3\sqrt{12}}{4\sqrt{20}} = \frac{3\sqrt{4}\sqrt{3}}{4\sqrt{4}\sqrt{5}} = \frac{6\sqrt{3}}{8\sqrt{5}} = \frac{6\sqrt{3} \times \sqrt{5}}{8\sqrt{5} \times \sqrt{5}}$$

$$= \frac{6\sqrt{15}}{8 \times 5}$$

$$= \frac{6\sqrt{15}}{40}$$

$$\frac{\sqrt{3} + \sqrt{5}}{\sqrt{6}} = \frac{(\sqrt{3} + \sqrt{5}) \times \sqrt{6}}{\sqrt{6} \times \sqrt{6}}$$

$$= \frac{\sqrt{18} + \sqrt{30}}{6}$$

$$= \frac{3\sqrt{2} \times \sqrt{2} + \sqrt{30}}{6}$$

$$= \frac{3\sqrt{2} + \sqrt{30}}{6}$$