

Accuplacer Study Modules

TOPIC: Rationalizing Denominators – Square Roots

Instructions: Rationalize each denominator.

1. $\frac{5}{3\sqrt{11}} \cdot \frac{\sqrt{11}}{\sqrt{11}} = \frac{5\sqrt{11}}{3\sqrt{121}}$

↓

$$\frac{5\sqrt{11}}{3 \cdot 11} = \boxed{\frac{5\sqrt{11}}{33}}$$

2. $\frac{4}{2\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{4\sqrt{7}}{2\sqrt{49}}$

↓

$$\frac{4\sqrt{7}}{2 \cdot 7} = \frac{\cancel{4}\sqrt{7}}{\cancel{14}} = \boxed{\frac{2\sqrt{7}}{7}}$$

3. $\frac{7}{6-\sqrt{3}} \cdot \frac{(6+\sqrt{3})}{(6+\sqrt{3})}$

$$\frac{42+7\sqrt{3}}{36+\cancel{6\sqrt{3}}-\cancel{6\sqrt{3}}-\sqrt{9}} = \frac{42+7\sqrt{3}}{36-3}$$

$$\boxed{\frac{42+7\sqrt{3}}{33}}$$

4. $\frac{(4+\sqrt{2})(2+\sqrt{5})}{(2-\sqrt{5})(2+\sqrt{5})}$

$$\frac{8+2\sqrt{2}+4\sqrt{5}+\sqrt{10}}{4+\cancel{2\sqrt{5}}-\cancel{2\sqrt{5}}-\sqrt{25}}$$

$$\frac{8+2\sqrt{2}+4\sqrt{5}+\sqrt{10}}{4-5=-1}$$

$$-\frac{(8+2\sqrt{2}+4\sqrt{5}+\sqrt{10})}{1}$$

$$\boxed{-8-2\sqrt{2}-4\sqrt{5}-\sqrt{10}}$$