Radicals – Rationalizing the Denominator

Procedure

1. **Multiply the expression by ONE to get rid of the radical in the denominator.**
   a) **if the denominator is a single radical, multiply by ONE in fractional form using a single radical so the index matches the exponent –** $\sqrt[n]{x^n}$
   b) **if the denominator is a binomial, multiply by ONE in fractional form using the conjugate.**

Example **Simplify** $\frac{5}{\sqrt{3}}$

a. $\frac{5}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}}=\frac{5\sqrt{3}}{3}$

Example **Simplify** $\frac{5}{3+\sqrt{7}}$

b. $\frac{5}{3+\sqrt{7}}\cdot\frac{3-\sqrt{7}}{3-\sqrt{7}}=\frac{5(3-\sqrt{7})}{9-7}=\frac{5(3-\sqrt{7})}{2}$

Simplify the following.

1. $\frac{4}{\sqrt{3}}$

2. $\frac{5}{\sqrt{2}}$

3. $\frac{1}{\sqrt{3}}$

4. $\frac{1}{\sqrt{2}}$

5. $\frac{1}{\sqrt{3}+2}$

6. $\frac{1}{\sqrt{5}-1}$

7. $\frac{3}{\sqrt{5}+4}$

8. $\frac{2}{\sqrt{5}-3}$

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