



Rationalizing the Denominator

With a Binomial Containing a Radical in the Denominator

Procedure: 1. Multiply by ONE in the fractional form using the conjugate.

Example:

$$\begin{aligned} \text{Simplify } \frac{2}{\sqrt{3}-1}. \\ \frac{2}{\sqrt{3}-1} \rightarrow \frac{2}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1} &= \frac{2(\sqrt{3}+1)}{(\sqrt{3})^2 + \sqrt{3} - \sqrt{3} - 1}, \\ &= \frac{2(\sqrt{3}+1)}{2}, \\ &= \sqrt{3}+1. \end{aligned}$$

Simplify the following.

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

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

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

4. $\frac{2}{\sqrt{6}-2}$

5. $\frac{12}{\sqrt{7}+1}$

6. $\frac{1}{\sqrt{10}-3}$

7. $\frac{4}{\sqrt{2}+2}$

8. $\frac{-3}{\sqrt{7}-1}$

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