

Monomial
multiply by radical

binomial
multiply by conjugate

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Date _____
Pre-Calculus

Rationalizing the Denominator

Rationalize the denominator of the following irrational expressions

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

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

2. $\frac{-7\sqrt{11}}{\sqrt{11}}$

$$\frac{-7\sqrt{11}}{11}$$

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

$$\frac{10+2\sqrt{2}}{25-2}$$

$$\frac{10+2\sqrt{2}}{23}$$

4. $\frac{4(3-\sqrt{6})}{(3+\sqrt{6})(3-\sqrt{6})}$

$$\frac{12-4\sqrt{6}}{9-6}$$

$$\frac{12-4\sqrt{6}}{3}$$

5. $\frac{6(2+\sqrt{3})}{(2-\sqrt{3})(2+\sqrt{3})}$

$$\frac{12+6\sqrt{3}}{4-3}$$

$$\frac{12+6\sqrt{3}}{1}$$

$$12+6\sqrt{3}$$

6. $\frac{-5(2-\sqrt{7})}{(2+\sqrt{7})(2-\sqrt{7})}$

$$\frac{-10+5\sqrt{7}}{4-7}$$

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

$$7. \frac{10}{(6-\sqrt{3})(6+\sqrt{3})}$$

$$\frac{60+10\sqrt{3}}{36-3} \quad \frac{60+10\sqrt{3}}{33}$$

$$8. \frac{-4}{(2+\sqrt{10})(2-\sqrt{10})} \quad \frac{-8+4\sqrt{10}}{-6-2}$$

$$\frac{-8+4\sqrt{10}}{4-10}$$

$$\frac{4-2\sqrt{10}}{3}$$

$$9. \frac{9}{(\sqrt{5}+9)(\sqrt{5}-9)}$$

$$\frac{9\sqrt{5}-81}{5-81} \quad \frac{9\sqrt{5}-81}{-76}$$

$$10. \frac{\sqrt{3}}{(\sqrt{2}-6)(\sqrt{2}+6)}$$

$$\frac{\sqrt{6}+6\sqrt{3}}{2-36} \quad \frac{\sqrt{6}+6\sqrt{3}}{-34}$$

$$11. \frac{(2+\sqrt{3})(2+\sqrt{3})}{(2-\sqrt{3})(2+\sqrt{3})}$$

$$\frac{4+2\sqrt{3}+2\sqrt{3}+3}{4-3}$$

$$\frac{7+4\sqrt{3}}{1}$$

$$7+4\sqrt{3}$$

$$12. \frac{(4+\sqrt{7})(5+\sqrt{2})}{(5-\sqrt{2})(5+\sqrt{2})}$$

$$\frac{20+4\sqrt{2}+5\sqrt{7}+\sqrt{14}}{25-2}$$

$$\frac{20+4\sqrt{2}+5\sqrt{7}+\sqrt{14}}{23}$$