9.1 Simplifying Radical Expressions

DAY THREE Conjugates

Reminder:

$$\frac{\sqrt{12x^3y}}{\sqrt{8xy^2}} = \frac{\sqrt{2\cdot 2\cdot 3xxxy}}{\sqrt{2\cdot 2\cdot 2xyy}} = \frac{2x\sqrt{3xy}}{2y\sqrt{2x}}\cdot\frac{\sqrt{2x}}{\sqrt{2x}}$$

$$= \frac{x\sqrt{6xxy}}{2yy} = \frac{x\sqrt{6y}}{2y}$$

Conjugates

$(x+y)(x-y) = x^2 - y^2$ xy

$(3x-2y)(3x+2y) = 9x^2 - 4y^2$ xy

$(3+2\sqrt{5})(3-2\sqrt{5}) = 9-4(5) = -11$ √

Example:

$$\frac{4}{4-3\sqrt{3}} = \frac{4}{4-3\sqrt{3}}\cdot\frac{4+3\sqrt{3}}{4+3\sqrt{3}}$$

$$= \frac{16+12\sqrt{3}}{4^2-(3\sqrt{3})^2}$$

$$= \frac{16+12\sqrt{3}}{16-9(3)}$$

$$= \frac{16+12\sqrt{3}}{-11} = \frac{-16-12\sqrt{3}}{11}$$

9.1 Simplifying Radical Expressions Conjugates DAY THREE with work

Simplify each

$\frac{5}{(\sqrt{7}+\sqrt{3})} \cdot \frac{(\sqrt{7}-\sqrt{3})}{(\sqrt{7}-\sqrt{3})} = \frac{5\sqrt{7}-5\sqrt{3}}{4}$

$\sqrt{49}-\sqrt{21}+\sqrt{21}-\sqrt{9}$

$7-3=4$

$\frac{3\sqrt{7}}{5\sqrt{3}+3\sqrt{5}} \cdot \frac{(5\sqrt{3}-3\sqrt{5})}{(5\sqrt{3}-3\sqrt{5})} = \frac{15\sqrt{21}-9\sqrt{35}}{30\ 10} = \frac{5\sqrt{21}-3\sqrt{35}}{10}$

$25\sqrt{9}-15\sqrt{15}+15\sqrt{15}-9\sqrt{25}$

$75-45=30$

Apr 1-9:50 AM

What conjugate would you use?

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

$5+\sqrt{2}$

22. $\frac{8}{3+\sqrt{3}}$

$3-\sqrt{3}$

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

$\sqrt{7}-\sqrt{3}$

24. $\frac{3\sqrt{7}}{-1-\sqrt{27}}$

$-1+\sqrt{27}$

Assignment 9.1 DAY THREE

9.1 Skills Practice WS

All: 1 - 24