Algebra II

6-4

Binomials Containing Radicals

Simplify. (pg 275)

conjugate pairs

1) $(3+\sqrt{7})(3-\sqrt{7})$

$9-7$

2

Conjugate pairs are necessary to remove radicals in the denominator if there is addition or subtraction.

13) $\dfrac{3}{\sqrt{5}+\sqrt{2}}$

$\dfrac{3(\sqrt{5}-\sqrt{2})}{5-2}$

$\dfrac{3(\sqrt{5}-\sqrt{2})}{3}$

$\sqrt{5}-\sqrt{2}$

Simplify. Assume each radical represents a real number.

41) $(\sqrt{n+1}+\sqrt{n})(\sqrt{n+1}-\sqrt{n})$

ignore the absolute value

$\sqrt{(n+1)^2}-\sqrt{n^2}$

$|n+1|-|n|$

$n+1-n$

1

33) If $f(x)=\dfrac{x}{x+1}$, find $f(1-\sqrt{2})$

$f(1-\sqrt{2})=\dfrac{1-\sqrt{2}}{(1-\sqrt{2})+1}=\dfrac{(1-\sqrt{2})(2+\sqrt{2})}{(2-\sqrt{2})(2+\sqrt{2})}$

$=\dfrac{2+\sqrt{2}-2\sqrt{2}-\sqrt{4}}{4-2}=\dfrac{-\sqrt{2}}{2}$

Pg 275

1-34all

42-46all