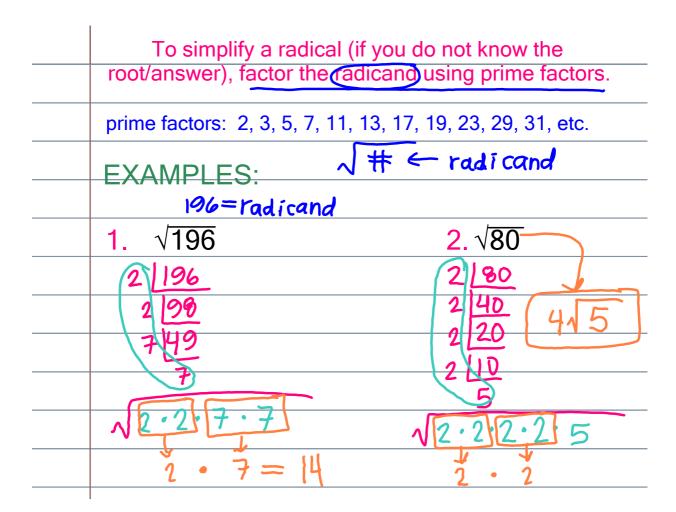
5.3 Solve Quadratics by Square Roots Square Root of Positive Number A number r is a square root of s if $r^2 = s$ radical sign The radical sign and radical sign and radical sign and roots: \sqrt{s} and $-\sqrt{s}$

 $\sqrt{100}$ = 10, since 10^2 = 100

 $\sqrt{100}$ = -10, since (-10)² = 100



KEY CONCEPTFor Your NotebookProperties of Square Roots ($a > 0, b > 0$)Product Property $\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$ Example $\sqrt{18} = \sqrt{9} \cdot \sqrt{2} = 3\sqrt{2}$ Quotient Property $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$ Example $\sqrt{\frac{2}{25}} = \frac{\sqrt{2}}{\sqrt{25}} = \frac{\sqrt{2}}{5}$	
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A square root is simplified when:	
1) the radicand has NO perfect square factors	
other than 1, 2) the radicand is NOT a fraction, and	
3) NO radical is in the denominator. bottom	
<u> </u>	
3. $\sqrt{(x+5)^2}$ 6. $\sqrt{(x-4)^2}$	
$\sqrt{(x+5)(x+5)}$ $\sqrt{(x-4)(x-4)}$	
Y L E V - II	
X-9	_
$\sqrt{3} \cdot \sqrt{75} = \sqrt{3 \cdot 75} 7 \cdot \sqrt{6} \cdot \sqrt{21}$	
	_
$5 = \sqrt{225}$	
$5 = \sqrt{225}$ $\sqrt{2 \cdot 3 \cdot 3 \cdot 7}$	_
5 3.3.5.5	7
$= \sqrt{225}$ $\sqrt{2 \cdot 3 \cdot 3} \cdot 7$ $3 \cdot 5 = 15$ $3\sqrt{14}$	}
3 • 5 = 15]
$3 \cdot 5 = 15$ $3 \cdot 14$ $4 \sqrt{4} 2 8 \sqrt{7} \sqrt{7}$]
3 • 5 = 15	
$3 \cdot 5 = 15$ $3 \cdot 14$ $4 \sqrt{4} 2 8 \sqrt{7} \sqrt{7}$]



To rationalize transforms a fraction to an equivalent form with NO radical in the denominator.

Steps:

1. Reduce the fraction, if possible.

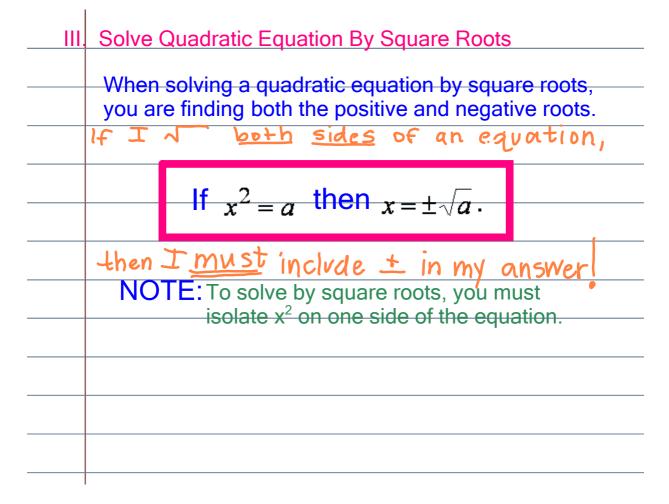
Reduce like parts: radicand to radicand;

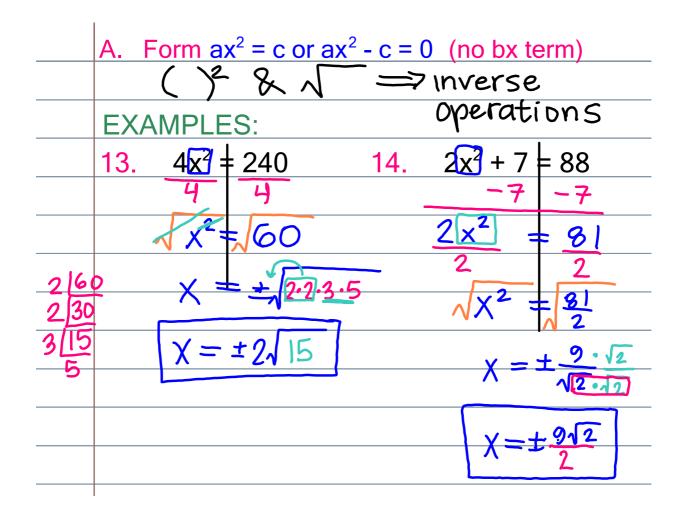
coefficient to coefficient

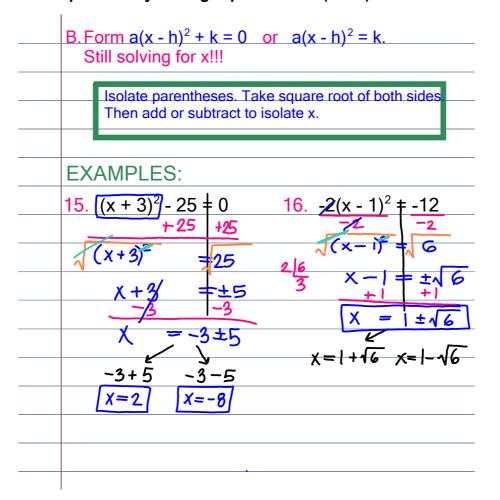
- 2. Multiply top and bottom by the square root in the denominator.
- 3. Simplify top and bottom. Reduce again, if possible.

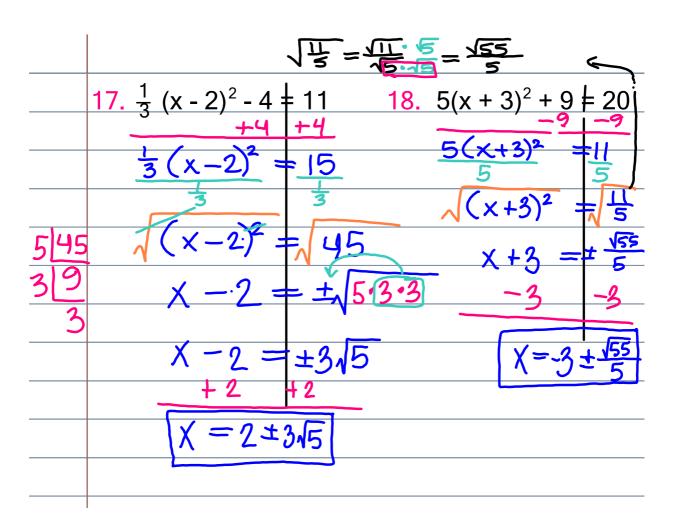
EXAMPLES:

9. 1 12 1/2 2	11. $\frac{\sqrt{12}}{\sqrt{18}}$ $\frac{2}{\sqrt{3}}$
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PRACTICE WORKSHEET Square Roots and Quad Equations.doc

Worksheet Simplify Square Roots.doc