Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) simplify a radical.
- a) multiply, add and subtract radical expressions.

Last day's work:

pp. 160-162 #1 - 5, 7, 9, 13 [17]

3.4 Operations with Radicals

Date: 0c1.13//5

Recall: When working with radicals all answers must be in lowest terms. Look for factors of the radicand that are perfect squares!

Ex.1: Simplify

a)
$$\sqrt{50}$$

b)
$$5\sqrt{45}$$

Ex.2: Compare

Entire radical Mixed radical
$$4\sqrt{5}$$
 and $3\sqrt{10}$
a) $\sqrt{50}$ b) $5\sqrt{45}$ = $\sqrt{4}\sqrt{5}$ = $\sqrt{9}\sqrt{5}$
= $\sqrt{37}\sqrt{2}$ = $\sqrt{9}\sqrt{5}$
= $\sqrt{16}\sqrt{5}$ = $\sqrt{9}\sqrt{5}$

Ex.3: Simplify

a)
$$\sqrt{6} \times \sqrt{3}$$

$$= \sqrt{19}$$

$$= \sqrt{9}$$

$$= \sqrt{3}$$

b)
$$(-2\sqrt{7})(3\sqrt{7})$$

= $-6\sqrt{7}$
= $-6\sqrt{7}$
= $-6\sqrt{7}$
= $-6\sqrt{7}$

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Note: Many rules are similar to algebra:

Ex.4: Simplify

radicals

algebra

a)
$$\sqrt{2} + \sqrt{2} + \sqrt{2}$$

$$x + x + x$$

b)
$$2\sqrt{3} + 5\sqrt{3}$$

$$2x + 5x$$

Ex.5: Simplify

c)
$$2\sqrt{3} + 3\sqrt{7}$$
 $2x + 3y$

$$2x + 3y$$

a) $3(4-\sqrt{6})$ b) $(2-3\sqrt{5})(6+\sqrt{5})$

 $=12-3\sqrt{6}$ = $12+2\sqrt{5}-18\sqrt{5}-3\sqrt{5}$

Summarizing some rules

$$\sqrt{a} + \sqrt{a}$$
 $\sqrt{a} \times \sqrt{a}$

$$= 2\sqrt{a} = a$$

$$\sqrt{\frac{a}{b}}$$
 \sqrt{a}

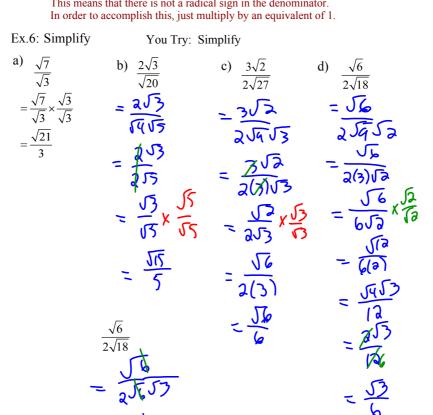
-12-1655-15 = -3-1655 d) $\sqrt{50} + \sqrt{27} - \sqrt{72} + 2\sqrt{12}$ =125/02 + 19/3 - 136/02 + 2/4/3 = 5/2 +3/3-6/2+2(2)/3 = 5/2+3/3-6/2+4/3 - - Ja +7. R

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October 13, 2015

Note: The textbook gives answers with the denominator rationalized. This means that there is not a radical sign in the denominator. In order to accomplish this, just multiply by an equivalent of 1.

a)
$$\frac{\sqrt{7}}{\sqrt{3}}$$
$$=\frac{\sqrt{7}}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}}$$
$$=\frac{\sqrt{21}}{3}$$



Are there any Homework Questions you would like to see on the board?

Last day's work: pp. 160-162 #1 - 5, 7, 9, 13 [17]



Today's Homework Practice includes:

pp. 167-168 #(1 -7)ace, 8-10, 12 [15-17]