p. 10-11 Simplifying Radicals w/Distribution 6.3

Get new multiplication table from green bin and glue onto inside front cover of notebook.

6.3 Simplifying Radicals using Distributive Property

a. I can define like radicals.

b. I can use the Distributive Property to add and subtract radical expressions

p. 10-11 Simplifying Radicals w/Distribution 6.3

Warm-up: Fill in the blanks

p. 10

$$a(b+c) = ab + ac$$

Then simplify.

1. 
$$2x(3x+7)$$
  
 $6x^2+1+x$ 

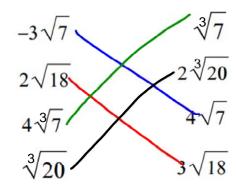
We have discussed how to multiply radicals...

Product Rule 
$$\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{a \cdot b}$$

In order to simplify radical expressions by distributing, we must also know how to add and subtract radicals...

| , in the second | p. 10  |
|---|--------|
| You can only combine I LETERMS  |        |
| have exactly the same with  | Card   |
| and Index, but may have different Coeff   | icient |

Practice: Draw a line to match the like radicals



## Adding/Subtracting Radicals

p. 10

Combine like radicals as you would other like terms:

- Combine the COCK UNITS
- Keep the same Yadical

1) 
$$(2\sqrt{5} + 7\sqrt{5} - 3\sqrt{6})$$
  
 $(2\sqrt{5} + 7\sqrt{5} - 3\sqrt{6})$ 

2) 
$$(-10\sqrt[3]{2} - 10\sqrt[3]{7} + \sqrt[3]{2}$$
  
 $-9\sqrt[3]{2} - 10\sqrt[3]{7}$ 

Let's put it all together...
Simplify by Distributing

p. 10

Step 1 - Write as the sum of two products

Step 2 - Simplify the products, if necessary

Step 3 - Combine Like Radicals, if necessary

3) 
$$3\sqrt{5}(\sqrt{2} + 2\sqrt{8})$$
 $3\sqrt{5}(\sqrt{2} + 2\sqrt{8})$ 
 $3\sqrt{5}\cdot 2 + (\sqrt{5}\cdot 8)$ 
 $3\sqrt{5}\cdot 2 + (\sqrt{5}\cdot 8$ 

Simplify the following by Distributing

p. 11

4) 
$$3\sqrt{10}(\sqrt{2} + 5\sqrt{8})$$
 $3\sqrt{10}(\sqrt{2} + 5\sqrt{8})$ 
 $5\sqrt{2}$ 
 $5\sqrt{2}$ 
 $5\sqrt{2}$ 
 $5\sqrt{2}$ 
 $5\sqrt{2}$ 
 $5\sqrt{2}$ 

Simplify the following by Distributing

p. 11

5) 
$$-10\sqrt{5}(\sqrt{15} + \sqrt{10})$$
  
 $-10\sqrt{5}(\sqrt{15} + \sqrt{10})$   
 $-10\sqrt{5}(\sqrt{15}$ 

Simplify the following by Distributing

p. 11

6) 
$$-3\sqrt{7}(5\sqrt{7}+\sqrt{6})$$
  
 $-15\sqrt{7}-3\sqrt{7}-6$   
 $+7$   
 $+7$   
 $+3$   
 $-105-3\sqrt{42}$ 

## Homework

Complete problems #1-4 by tomorrow

#5 - 16 will be completed during class tomorrow

## **Quiz on Thursday**