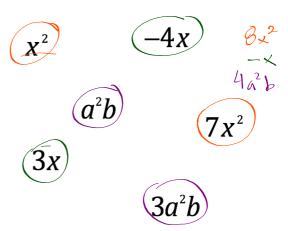
3-2 Operations with Radicals

Objectives:

- 3-2a: I can multiply radical expressions
- 3-2b: I can add and subtract radical expressions

Group Together all the like terms



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Combine the following like terms

$$x-2+3x+7$$

$$3a+4b-a-2b$$

$$9x^{2} + x - 3x + 4$$

Like Terms for Radicals

$$3\sqrt{2}^* + \sqrt{2}^* = 4\sqrt{2}$$

$$2\sqrt{x} + 7\sqrt{x} = 9\sqrt{x}$$

Simplify following radical expressions

Simplify following radical expressions
$$4\sqrt{2} - \sqrt{3} + \sqrt{2}$$

$$3\sqrt{5} + 7\sqrt{5} - \sqrt{3}$$

105- -5

$$\sqrt{20} + \sqrt{45}$$
 $\sqrt{23} + \sqrt{3}$
 $\sqrt{23} + \sqrt{15}$
 $\sqrt{23} + \sqrt{15}$
 $\sqrt{23} + \sqrt{15}$

Simplify following radical expressions

$$\sqrt{3}-2\sqrt{3}+\sqrt{7}$$

$$3\sqrt{11} + 4\sqrt{3} - \sqrt{11}$$

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$$+10$$
) $-2\sqrt{45} - 3\sqrt{20} - 2\sqrt{6}$
 $9 = 4 = 5 = 3/2$
 $-6\sqrt{5} - 6\sqrt{5} - 2\sqrt{6}$
 $-12\sqrt{5} - 2\sqrt{6}$

Multiplying Radicals

$$\sqrt{2} \cdot \sqrt{3} = \sqrt{2 \cdot 3} = \sqrt{6}$$

You do not need like terms to multiply
You only need the same root

$$2\sqrt{5} \cdot 3\sqrt{7} = 2 \cdot 3\sqrt{5 \cdot 7} = \sqrt{35}$$

**Multiply outsides to outsides, and insides to insides*

Multiply the following

$$\sqrt{5} \cdot \sqrt{3} = \sqrt{15}$$

$$\sqrt{11} \cdot \sqrt{7}$$

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Multiply the following

$$4\sqrt{3} \cdot 2\sqrt{5}$$