



Date:

Section:

Objective:

The Product Rule for Radicals:

Caution:

Caution:

Examples: Multiply.

a) $\sqrt{7} \cdot \sqrt{5}$

b) $5\sqrt{2} \cdot \sqrt{8}$

c) $2\sqrt{5} \cdot 7\sqrt{15}$

d) $\sqrt{3} \cdot \sqrt{3}$

e) $(\sqrt{8})^2$

f) $(3\sqrt{11})^2$

g) $\sqrt[3]{3} \cdot \sqrt[3]{9}$

h) $2\sqrt[3]{10} \cdot 6\sqrt[3]{25}$

Question: Can you add and subtract radicals the same way you multiply and divide them?

e.g.) Since $\sqrt{a} \cdot \sqrt{b} = \sqrt{ab}$, does $\sqrt{a} + \sqrt{b} = \sqrt{a+b}$?

Don't make the following mistakes:

- .
- .
- .
- .
- .

Like Radicals:

Examples: Determine whether the following are like radicals. If they are not, explain why not.

a) $\sqrt{3}$ and $\sqrt{2}$

b) $4\sqrt{5}$ and $-3\sqrt{5}$

c) $2\sqrt{x}$ and $\sqrt[3]{x}$

Steps for Adding and Subtracting Radicals:

1. .

2. .

Examples:

a) $5\sqrt{3x} - 7\sqrt{3x}$

b) $4\sqrt{11} + 8\sqrt{11}$

c) $10\sqrt{6} + 3\sqrt{2} - 8\sqrt{6}$

d) $\sqrt{20} - \sqrt{50} + \sqrt{45}$

e) $2\sqrt{50} + 4\sqrt{500} - 6\sqrt{125}$

f) $\sqrt[3]{54} - 5\sqrt[3]{16} + \sqrt[3]{2}$

Steps for Multiplying Radical Expressions:**Type 1 =**

1. .

2.

OR**Type 2 =**

1.

2.

OR**Type 3 =**

1.

2.

3.

Examples: Multiply.

a) $\sqrt{3}(5 + \sqrt{30})$

b) $\sqrt{2}(\sqrt{6} - 3\sqrt{2})$

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

d) $(5\sqrt{3} - 4\sqrt{2})(\sqrt{3} + \sqrt{2})$

e) $(4\sqrt{3} - 1)^2$

f) $(\sqrt{2} + 5)(\sqrt{2} - 5)$