

Goals:

- I can simplify radical expressions.
- I can add, subtract, multiply, and divide radical expressions.

Name: _____

Algebra II
Ops w/ Radical Expressions

Note: Radicals can be added and subtracted when they are like terms. They are like terms when both the index and the radicand are identical.

Like: $\sqrt{3b}$ and $4\sqrt{3b}$ Unlike: $\sqrt{3b}$ and $\sqrt[3]{3b}$ Unlike: $\sqrt{2b}$ and $\sqrt{3b}$ Example 5: **Add and Subtract Radicals****Simplify** $\sqrt{32} - 2\sqrt{32}$.Example 6: **Multiply Radicals****Simplify** $(4\sqrt{3} + 5\sqrt{2})(3\sqrt{2} - 6)$.Example 7: **Use a Conjugate to Rationalize a Denominator**

a. $\frac{2}{\sqrt{5}-1}$

b. $\frac{3+x}{\sqrt{2}+x}$

HOMEWORK

Name: _____

Simplify.

1) $-5\sqrt{3} - 3\sqrt{3}$

2) $2\sqrt{8} - \sqrt{8}$

3) $-4\sqrt{6} - \sqrt{6}$

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

5) $-3\sqrt{27} - 3\sqrt{27} - 3\sqrt{27}$

6) $-3\sqrt{12} + 3\sqrt{3} + 3\sqrt{20}$

7) $-2\sqrt{45} - 3\sqrt{20} - 2\sqrt{6}$

8) $-3\sqrt[6]{3} - 2\sqrt[6]{192} - \sqrt[6]{320}$

21) $\sqrt{15}(2\sqrt{10} - 4\sqrt{6})$

22) $(-7 + \sqrt{3x})(4 + \sqrt{3x})$

23) $(\sqrt{2a} - 5)(7\sqrt{2a} - 5)$

24) $(2 + \sqrt{5})(-2 + \sqrt{5k})$

25) $(\sqrt{3} + \sqrt{5x})(\sqrt{3} - 5\sqrt{5x})$

26) $(7 + \sqrt{6})(1 + \sqrt{6})$