

DO NOW

Simplify:

1. $3x + 4y - 2x + 8y$

$$x + 12y$$

2. $2\sqrt{175x^3y^9}$

$$2\sqrt{175} \sqrt{x^3} \sqrt{y^9}$$

$$2\sqrt{25} \sqrt{7} \sqrt{x^2} \sqrt{x} \sqrt{y^8} \sqrt{y}$$

$$2\sqrt{25} \sqrt{x^2} \sqrt{y^8} \sqrt{7xy}$$

$$2(5xy^4) \sqrt{7xy}$$

$$10xy^4 \sqrt{7xy}$$

1.7 Addition & Subtraction of Radicals

Recall for addition: can only combine items with the same "last name"

$$3x + 4x = 7x$$

$$3\sqrt{5} + 4\sqrt{5} = 7\sqrt{5}$$

$$7\sqrt{3} + 10\sqrt{3} = 17\sqrt{3}$$

- ONLY LIKE TERMS CAN BE COMBINED
- Simplify all radicals BEFORE combining like terms.

Examples:

1. $4\sqrt{5} + 7\sqrt{5} + 6\sqrt{2}$

$$11\sqrt{5} + 6\sqrt{2}$$

2. $5\sqrt{3} - \sqrt{3}$

$$4\sqrt{3}$$

3. $6\sqrt{27} - \sqrt{75} + 3\sqrt{12}$

$$6\sqrt{9}\sqrt{3} - \sqrt{25}\sqrt{3} + 3\sqrt{4}\sqrt{3}$$

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

$$18\sqrt{3} - 5\sqrt{3} + 6\sqrt{3}$$

$$13\sqrt{3} + 6\sqrt{3}$$

$$19\sqrt{3}$$

4. $7\sqrt{5} - 2\sqrt{20}$

$$7\sqrt{5} - 2\sqrt{4}\sqrt{5}$$

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

$$7\sqrt{5} - 4\sqrt{5}$$

$$3\sqrt{5}$$

5. $4\sqrt{3} + 4\sqrt{12}$

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

$$4\sqrt{3} + 4(2)\sqrt{3}$$

$$4\sqrt{3} + 8\sqrt{3}$$

$$12\sqrt{3}$$

6. $5\sqrt{2} - \sqrt{32}$

$$5\sqrt{2} - \sqrt{16}\sqrt{2}$$

$$5\sqrt{2} - 4\sqrt{2}$$

$$\sqrt{2}$$

Try:

$$6\sqrt{20} - 3\sqrt{45} + \sqrt{80}$$

$$6\sqrt{4}\sqrt{5} - 3\sqrt{9}\sqrt{5} + \sqrt{16}\sqrt{5}$$

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

$$12\sqrt{5} - 9\sqrt{5} + 4\sqrt{5}$$

$$3\sqrt{5} + 4\sqrt{5}$$

$$7\sqrt{5}$$

HOMEWORK

Worksheet - HW 1.7

Add & Subtract Radicals