

Objective

The student will be able to:

simplify radical expressions
involving addition and subtraction.

SOL: A.3

1. Simplify. $3\sqrt{5} + 4\sqrt{5} - 2\sqrt{5}$

Just like when adding variables, you can only combine LIKE radicals.

$$5\sqrt{5}$$

2. Simplify. $6\sqrt{7} - \sqrt{3} - 2\sqrt{7} + 4\sqrt{3}$

Which are like radicals?


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

Simplify $5\sqrt{2} + 6\sqrt{2} - 4\sqrt{2}$

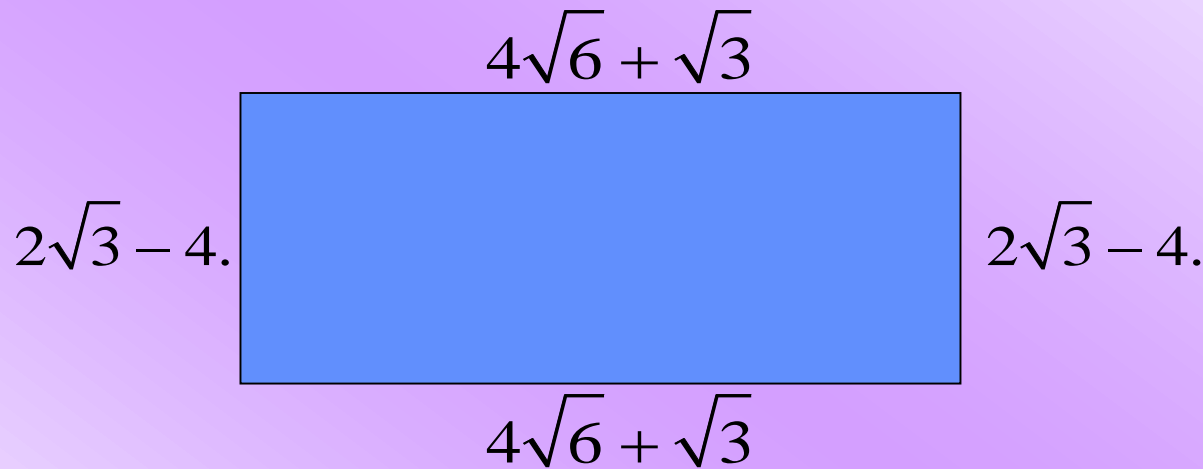
1. $5\sqrt{2} + 6\sqrt{2} - 4\sqrt{2}$

2. $15\sqrt{2}$

3. $3\sqrt{2}$

 4. $7\sqrt{2}$

3. Find the perimeter of a rectangle whose length is $4\sqrt{6} + \sqrt{3}$ and whose width is $2\sqrt{3} - 4$.



Perimeter = Add all of the sides

$$8\sqrt{6} + 6\sqrt{3} - 8$$

4. Simplify. $4\sqrt{27} - 2\sqrt{48} + 2\sqrt{20}$

Simplify each radical.

$$4\sqrt{9 \cdot 3} - 2\sqrt{16 \cdot 3} + 2\sqrt{4 \cdot 5}$$

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

$$12\sqrt{3} - 8\sqrt{3} + 4\sqrt{5}$$

Combine like radicals.

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

5. Simplify $8\sqrt{50} + 5\sqrt{72} - 2\sqrt{98}$

$$8\sqrt{25 \cdot 2} + 5\sqrt{36 \cdot 2} - 2\sqrt{49 \cdot 2}$$

$$8 \cdot 5\sqrt{2} + 5 \cdot 6\sqrt{2} - 2 \cdot 7\sqrt{2}$$

$$40\sqrt{2} + 30\sqrt{2} - 14\sqrt{2}$$

$$56\sqrt{2}$$

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

1. $5\sqrt{3} + 4\sqrt{2} - 3\sqrt{3}$

2. $6\sqrt{2}$

✓ 3. $2\sqrt{3} + 4\sqrt{2}$


4. $8\sqrt{3} + 4\sqrt{2}$

Simplify $3\sqrt{12} + 4\sqrt{27}$

1. $7\sqrt{39}$

2. $48\sqrt{3}$

3. $48\sqrt{6}$

 4. $18\sqrt{3}$