

7.2

Simplifying a Sum of Radical Expressions

• Example 1

Simplify each expression.

$$(a) \ 5\sqrt{3x} - 2\sqrt{3x} = (5 - 2)\sqrt{3x} = 3\sqrt{3x}$$

$$\begin{aligned}(b) \ 2\sqrt{3a^3} + 5a\sqrt{3a} \\ &= 2\sqrt{a^2 \cdot 3a} + 5a\sqrt{3a} \\ &= 2\sqrt{a^2} \cdot \sqrt{3a} + 5a\sqrt{3a} \\ &= 2a\sqrt{3a} + 5a\sqrt{3a} \\ &= (2a + 5a)\sqrt{3a} = 7a\sqrt{3a}\end{aligned}$$

● ● ● CHECK YOURSELF 1

Simplify each expression.

a. $2\sqrt{7y} + 3\sqrt{7y}$

b. $\sqrt{20a^2} - a\sqrt{45}$

● ● ● CHECK YOURSELF ANSWER

1. (a) $5\sqrt{7y}$; (b) $-a\sqrt{5}$.

7.2 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

Simplify each expression.

1. $a\sqrt{27} - 2\sqrt{3a^2}$

2. $5\sqrt{2y^2} - 3y\sqrt{8}$

3. $5\sqrt{3x^3} + 2\sqrt{27x}$

4. $7\sqrt{2a^3} - \sqrt{8a}$

5. $\sqrt{80m^3} + 2m\sqrt{45m}$

6. $\sqrt{24b^5} - 3b\sqrt{54b^3}$

7. $\sqrt{75x^4y^3} + xy\sqrt{48x^2y}$

8. $yz\sqrt{28y^5z^2} + 2y^2\sqrt{175y^3z^4}$

9. $\sqrt{60p^3} - p\sqrt{15p^3}$

10. $\sqrt{98x^3y^2} + 3xy\sqrt{32x^3}$

11. $\sqrt{40x^2y^6} + x\sqrt{90x^2y^6}$

12. $6m\sqrt{20m^2n^3} - \sqrt{125m^2n^3}$