

EXTRA PRACTICE — Exercises

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Unit VII – Relations of Rational Number Degree Part B – Operations with Radical Expressions Lesson 4 – Addition and Subtraction

For each of the following, find the indicated sums and differences, being sure to simplify your results.

1. $2\sqrt{7} + 3\sqrt{7}$

2. $7\sqrt[4]{5} - 2\sqrt[4]{5}$

3. $\sqrt{18} + \sqrt{32}$

4. $\sqrt{7x} - \sqrt{28x}$

5. $14\sqrt{20} - 3\sqrt{125}$

6. $16\sqrt{18} + 3\sqrt{50}$

7. $\sqrt{32x} + \sqrt{300y} - \sqrt{16x} + \sqrt{y}$

8. $\sqrt[4]{32} + \sqrt[4]{48}$

9. $3\sqrt{18} + 2\sqrt{72}$

10. $\sqrt{49ab^3} - \sqrt{ab^3} + 4b\sqrt{ab}$

11. $7\sqrt{y} + \sqrt{y}$

12. $\sqrt[3]{54x^{10}} + \sqrt[3]{81x^7}$

13. $\sqrt[3]{7} + 6\sqrt[3]{7}$

14. $y\sqrt{12x^5y} - x^2y\sqrt{3xy} + x^2\sqrt{27xy^3}$

15. $3\sqrt[3]{81} - 2\sqrt[3]{54}$

16. $\sqrt{48x^6} - x\sqrt{27x^4} - 3x^2\sqrt{192x^2}$

17. $\sqrt[4]{5x^9} + \sqrt[4]{5x^{12}}$

18. $\sqrt[3]{14} - \sqrt[3]{112}$

19. $2\sqrt[3]{81x^2} + \sqrt[3]{375x^8} - 2\sqrt[3]{3x^5}$

20. $2x\sqrt{98x^3} - \frac{1}{2}\sqrt{200x^5} + \sqrt{121x}$

EXTRA PRACTICE — Answer Key

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For each of the following, find the indicated sums and differences, being sure to simplify your results.

1. $5\sqrt{7}$

2. $5\sqrt[4]{5}$

3. $7\sqrt{2}$

4. $-\sqrt{7x}$

5. $13\sqrt{5}$

6. $33\sqrt{2}$

7. $(4\sqrt{2} - 4)\sqrt{x} + (10\sqrt{3} + 1)\sqrt{y}$

8. $2(\sqrt[4]{2} + \sqrt[4]{3})$

9. $21\sqrt{2}$

10. $10b\sqrt{ab}$

11. $8\sqrt{y}$

12. $3x^2\sqrt[3]{x}(x\sqrt{2} + \sqrt[3]{3})$

13. $7\sqrt[3]{7}$

14. $4x^2y\sqrt{3xy}$

15. $9\sqrt[3]{3} - 6\sqrt[3]{2}$

16. $-23x^3\sqrt{3}$

17. $x^2\sqrt[4]{5}(\sqrt[4]{x} + x)$

18. $-\sqrt[3]{14}$

19. $(5x^2 - 2x + 6)\sqrt[3]{3x^2}$

20. $9x^2\sqrt{2x} + 11\sqrt{2x}$ or $\sqrt{2x}(9x^2 + 11)$