

SHOW ALL WORK.

Complete Parts A & B OR Parts B & C

PART A:

Simplify the expression.

1. $\sqrt{20} \cdot \sqrt{5}$

2. $\sqrt[3]{16} \cdot \sqrt[3]{4}$

3. $\frac{\sqrt[5]{64}}{\sqrt[5]{2}}$

4. $\sqrt{72}$

5. $\sqrt[6]{256}$

6. $\frac{3}{5}\sqrt[3]{5} - \frac{1}{5}\sqrt[3]{5}$

7. $2\sqrt[6]{3} + 7\sqrt[6]{3}$

8. $25\sqrt[5]{2} - 15\sqrt[5]{2}$

Describe and correct the error in simplifying the expression.

9. $2\sqrt[3]{10} + 6\sqrt[3]{5} = (2+6)\sqrt[3]{15}$
 $= 8\sqrt[3]{15}$

10. $\sqrt[3]{\frac{x}{y^2}} = \sqrt[3]{\frac{x}{y^2 \cdot y}} = \sqrt[3]{\frac{x}{y^3}} = \frac{\sqrt[3]{x}}{y}$

PART B:

Simplify the expression.

11. $\sqrt[4]{8} \cdot \sqrt[4]{8}$

12. $(\sqrt[3]{3} \cdot \sqrt[4]{3})^{12}$

13. $\frac{\sqrt{3}}{\sqrt{75}}$

14. $\frac{\sqrt[4]{36} \cdot \sqrt[4]{9}}{\sqrt[4]{4}}$

15. $3\sqrt[4]{32} \cdot (-6\sqrt[4]{5})$

16. $\sqrt[3]{108} \cdot \sqrt[3]{4}$

17. $5\sqrt[4]{64} \cdot 2\sqrt[4]{8}$

18. $\sqrt[3]{\frac{1}{6}}$

19. $\frac{3}{\sqrt[4]{144}}$

20. $\sqrt[6]{\frac{81}{4}}$

21. $\frac{1}{8}\sqrt[4]{7} + \frac{3}{8}\sqrt[4]{7}$

22. $6\sqrt[3]{5} + 4\sqrt[3]{625}$

23. $-6\sqrt[3]{2} + 2\sqrt[3]{256}$

24. $12\sqrt[4]{2} - 7\sqrt[4]{512}$

25. $2\sqrt[4]{1250} - 8\sqrt[4]{32}$

26. $5\sqrt[3]{48} - \sqrt[3]{750}$

PART C:**Simplify the expression.**

27. $\frac{\sqrt[4]{8} \cdot \sqrt[4]{16}}{\sqrt[8]{2} \cdot \sqrt[8]{3}}$

28. $\frac{\sqrt[3]{9}}{\sqrt[5]{27}}$

Homework 4.1

1. 10 2. 4 3. 2 4. $6\sqrt{2}$ 5. $2\sqrt[6]{4}$ 6. $\frac{2}{5}\sqrt[3]{5}$ 7. $9\sqrt[6]{3}$

8. $10\sqrt[5]{2}$ 9. Radicands are not the same, so they cannot be combined. $2\sqrt[3]{10} + 6\sqrt[3]{5}$

10. The numerator must also be multiplied by y. $\sqrt[3]{\frac{x \cdot y}{y^2 \cdot y}} = \sqrt[3]{\frac{x \cdot y}{y^3}} = \frac{\sqrt[3]{x \cdot y}}{y}$

11. $2\sqrt[4]{4}$ 12. 2187 13. $\frac{1}{5}$ 14. 3 15. $-36\sqrt[4]{10}$ 16. $6\sqrt[3]{2}$ 17. $40\sqrt[4]{2}$

18. $\frac{\sqrt[3]{36}}{6}$ 19. $\frac{\sqrt[4]{9}}{2}$ 20. $\frac{\sqrt[6]{1296}}{2}$ 21. $\frac{1}{2}\sqrt[4]{7}$ 22. $26\sqrt[3]{5}$ 23. $-2\sqrt[7]{2}$ 24. $-16\sqrt[4]{2}$

25. $-6\sqrt[4]{2}$ 26. $5\sqrt[3]{6}$ 27. $\frac{2\sqrt[8]{69,984}}{3}$ 28. $\sqrt[15]{3}$