

Appendix B.2

2. $\sqrt{256} = 16$ TRUE 4. $\sqrt{49} = -7$ FALSE

6. $\sqrt{10+6} = \sqrt{10} + \sqrt{6}$ FALSE $\sqrt{10+6} = \sqrt{16} = 4$

8. $\sqrt{(-5)^2} = -5$ FALSE

11. A. $\sqrt[3]{\frac{8}{125}} = \frac{2}{5}$ B. $\sqrt[3]{\frac{-8}{125}} = -\frac{2}{5}$

14. A. $-\sqrt[4]{16} = -2$ B. $-\sqrt[4]{-16}$ is undefined

17. A. $\sqrt[5]{-32} = -2$ B. $-\sqrt[5]{-32} = 2$

18. A. $\sqrt[4]{(-10)^4} = 10$ B. $\sqrt[3]{(-10)^3} = -10$

24. A. $\sqrt{\frac{225}{49}} = \frac{25}{7}$ B. $\sqrt[5]{\frac{-256}{243}} = \sqrt[5]{\frac{32 \cdot 8}{3^5}} = \sqrt[5]{\frac{2^5 \cdot 8}{3^5}} = \left(\frac{2}{3}\right) \sqrt[5]{8}$
 $= \frac{2}{3} \sqrt[5]{8}$

26. A. $4\sqrt{3} - 2\sqrt{27} = 4\sqrt{3} - 6\sqrt{3} = -2\sqrt{3}$

B. $2\sqrt[3]{81} + 3\sqrt[3]{24} = (2)(3)\sqrt[3]{3} + (3)(2)\sqrt[3]{3} = 12\sqrt[3]{3}$

34. $\sqrt[3]{\sqrt{4096}} = \sqrt[3]{64} = 4$

36. A. $\sqrt{225x^4y^3} = 15x^2y\sqrt{y}$ B. $\sqrt[4]{16a^4} = 2a$

38. A. $\sqrt[3]{125x^6} = 5x^2$ B. $\sqrt[4]{64y^4} = 2|y|\sqrt[4]{4} = 2|y| = \sqrt[4]{4}$

40. $\sqrt{(a+b)^5/16a^2b^2} = \left(\frac{(a+b)}{4|ab|}\right) \sqrt{a+b}$

42. $\sqrt[3]{8a^4b^6} = 2ab^2\sqrt[3]{a}$

43. $\sqrt[3]{16a^{12}b^2/c^9} = \frac{2a^4}{c^3} \sqrt[3]{2b^2}$

$$44. \sqrt[4]{ab^3} \sqrt[4]{a^3b} = \sqrt[4]{a^4b^4} = ab$$

$$77. \sqrt{a+b} \neq \sqrt{a} + \sqrt{b}$$

$$(ex) a=4 \quad b=5$$

$$\sqrt{4+5} = \sqrt{9} = 3$$

$$\sqrt{4} + \sqrt{5} = 2 + \approx 2.236 \\ \approx 4.236$$

$$78. \sqrt{x^2+y^2} \neq x+y$$

$$(ex) x=3 \quad y=4$$

$$\sqrt{9+16} = \sqrt{25} = 5 \quad 3+4=7$$

$$79. \sqrt[3]{u+v} \neq \sqrt[3]{u} + \sqrt[3]{v}$$

$$u=8 \quad v=27$$

$$\sqrt[3]{8+27} \approx \sqrt[3]{35} \approx 3.27$$

$$\sqrt[3]{8} + \sqrt[3]{27} = 2+3=5$$

$$80. \sqrt[3]{p^3+q^3} = p+q$$

$$p=2 \quad q=3$$

$$\sqrt[3]{8+27} = \sqrt[3]{35} \approx 3.27$$

$$2+3=5$$