

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

5

2 - Practice

2-52

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ODD

$$2. (12^2)^{1/4} = 12^{[2 \cdot (1/4)]} = 12^{1/2}$$

$$4. \frac{7}{7^{1/3}} = 7^{[1 - (1/3)]} = 7^{2/3}$$

$$\begin{aligned} 6. \left(\frac{9^3}{6^3}\right)^{-1/3} &= \left[\left(\frac{9}{6}\right)^3\right]^{-1/3} \\ &= \left(\frac{9}{6}\right)^{3 \cdot (-1/3)} \\ &= \left(\frac{9}{6}\right)^{-1} \\ &= \frac{6}{9} = \frac{2}{3} \end{aligned}$$

$$\begin{aligned} 8. (5^{1/2} \cdot 5^{-3/2})^{-1/4} &= [5^{1/2 + (-3/2)}]^{-1/4} \\ &= (5^{-2/2})^{-1/4} \\ &= (5^{-1})^{-1/4} \\ &= 5^{1/4} \end{aligned}$$

$$\begin{aligned}
 10. \frac{49^{3/8} \cdot 49^{7/8}}{7^{5/4}} &= \frac{(7^2)^{3/8} \cdot (7^2)^{7/8}}{7^{5/4}} \\
 &= \frac{7^{3/4} \cdot 7^{7/4}}{7^{5/4}} \\
 &= \frac{7^{(3/4 + 7/4)}}{7^{5/4}} \\
 &= \frac{7^{10/4}}{7^{5/4}} \\
 &= 7^{(10/4 - 5/4)} \\
 &= 7^{5/4}
 \end{aligned}$$

$$\begin{aligned}
 12. \sqrt[3]{16} \cdot \sqrt[3]{32} &= \sqrt[3]{16 \cdot 32} \\
 &= \sqrt[3]{512} \\
 &= 8
 \end{aligned}$$

$$14. \sqrt[4]{2} \cdot \sqrt[4]{128} = \sqrt[4]{2 \cdot 128} = \sqrt[4]{256} = 4$$

$$\begin{aligned}
 16. \frac{\sqrt{2}}{\sqrt{32}} &= \sqrt{\frac{2}{32}} \\
 &= \sqrt{\frac{1}{16}} = \frac{1}{4}
 \end{aligned}$$

$$\begin{aligned} 18. \frac{\sqrt[3]{3} \cdot \sqrt[3]{18}}{\sqrt[6]{2} \cdot \sqrt[6]{2}} &= \frac{\sqrt[3]{3 \cdot 18}}{\sqrt[6]{2 \cdot 2}} \\ &= \frac{\sqrt[3]{54}}{\sqrt[6]{2^2}} \\ &= \frac{\sqrt[3]{54}}{\sqrt[3]{2}} \\ &= \sqrt[3]{\frac{54}{2}} \\ &= \sqrt[3]{27} = 3 \end{aligned}$$

$$\begin{aligned} 20. \sqrt[5]{288} &= \sqrt[5]{32 \cdot 9} \\ &= \sqrt[5]{32} \sqrt[5]{9} \\ &= 2\sqrt[5]{9} \end{aligned}$$

$$\begin{aligned} 22. \frac{\sqrt[4]{4}}{\sqrt[4]{27}} &= \frac{\sqrt[4]{4}}{\sqrt[4]{27}} \cdot \frac{\sqrt[4]{3}}{\sqrt[4]{3}} \\ &= \frac{\sqrt[4]{12}}{\sqrt[4]{81}} \\ &= \frac{\sqrt[4]{12}}{3} \end{aligned}$$

$$\begin{aligned}
 24. \sqrt[3]{\frac{7}{4}} &= \frac{\sqrt[3]{7}}{\sqrt[3]{4}} \cdot \frac{\sqrt[3]{2}}{\sqrt[3]{2}} \\
 &= \frac{\sqrt[3]{14}}{\sqrt[3]{8}} \\
 &= \frac{\sqrt[3]{14}}{2}
 \end{aligned}$$

$$\begin{aligned}
 26. \sqrt[4]{\frac{1296}{25}} &= \frac{\sqrt[4]{1296}}{\sqrt[4]{25}} \cdot \frac{\sqrt[4]{25}}{\sqrt[4]{25}} \\
 &= \frac{6\sqrt[4]{25}}{\sqrt[4]{625}} \\
 &= \frac{6\sqrt[4]{25}}{5} \\
 &= \frac{6\sqrt{5}}{5}
 \end{aligned}$$

$$\begin{aligned}
 28. \frac{1}{2 + \sqrt{5}} &= \frac{1}{2 + \sqrt{5}} \cdot \frac{2 - \sqrt{5}}{2 - \sqrt{5}} \\
 &= \frac{1(2 - \sqrt{5})}{2^2 - (\sqrt{5})^2} \\
 &= \frac{2 - \sqrt{5}}{4 - 5} \\
 &= \frac{2 - \sqrt{5}}{-1} \\
 &= \sqrt{5} - 2
 \end{aligned}$$

$$\begin{aligned}
 30. \quad \frac{11}{9 - \sqrt{6}} &= \frac{11}{9 - \sqrt{6}} \cdot \frac{9 + \sqrt{6}}{9 + \sqrt{6}} \\
 &= \frac{11(9 + \sqrt{6})}{9^2 - (\sqrt{6})^2} \\
 &= \frac{99 + 11\sqrt{6}}{81 - 6} \\
 &= \frac{99 + 11\sqrt{6}}{75}
 \end{aligned}$$

$$\begin{aligned}
 32. \quad \frac{2}{\sqrt{8} + \sqrt{7}} &= \frac{2}{\sqrt{8} + \sqrt{7}} \cdot \frac{\sqrt{8} - \sqrt{7}}{\sqrt{8} - \sqrt{7}} \\
 &= \frac{2(\sqrt{8} - \sqrt{7})}{(\sqrt{8})^2 - (\sqrt{7})^2} \\
 &= \frac{2\sqrt{8} - 2\sqrt{7}}{8 - 7} \\
 &= 2\sqrt{8} - 2\sqrt{7} \\
 &= 4\sqrt{2} - 2\sqrt{7}
 \end{aligned}$$

$$\begin{aligned}
 34. \quad \frac{\sqrt{7}}{\sqrt{10} - \sqrt{2}} &= \frac{\sqrt{7}}{\sqrt{10} - \sqrt{2}} \cdot \frac{\sqrt{10} + \sqrt{2}}{\sqrt{10} + \sqrt{2}} \\
 &= \frac{\sqrt{7}(\sqrt{10} + \sqrt{2})}{(\sqrt{10})^2 - (\sqrt{2})^2} \\
 &= \frac{\sqrt{70} + \sqrt{14}}{10 - 2} \\
 &= \frac{\sqrt{70} + \sqrt{14}}{8}
 \end{aligned}$$

$$\begin{aligned} 36. 8\sqrt[6]{5} - 12\sqrt[6]{5} &= (8 - 12)\sqrt[6]{5} \\ &= -4\sqrt[6]{5} \end{aligned}$$

$$\begin{aligned} 38. 13(8^{3/4}) - 4(8^{3/4}) &= (13 - 4)(8^{3/4}) \\ &= 9(8^{3/4}) \end{aligned}$$

$$\begin{aligned} 40. 27\sqrt{6} + 7\sqrt{150} &= 27\sqrt{6} + 7\sqrt{6 \cdot 25} \\ &= 27\sqrt{6} + 7\sqrt{6}\sqrt{25} \\ &= 27\sqrt{6} + 35\sqrt{6} \\ &= (27 + 35)\sqrt{6} \\ &= 62\sqrt{6} \end{aligned}$$

$$\begin{aligned} 42. 7\sqrt[3]{2} - \sqrt[3]{128} &= 7\sqrt[3]{2} - \sqrt[3]{64 \cdot 2} \\ &= 7\sqrt[3]{2} - \sqrt[3]{64}\sqrt[3]{2} \\ &= 7\sqrt[3]{2} - 4\sqrt[3]{2} \\ &= (7 - 4)\sqrt[3]{2} \\ &= 3\sqrt[3]{2} \end{aligned}$$

$$\begin{aligned} 44. 5^{1/4} + 6(405^{1/4}) &= 5^{1/4} + 6[(81 \cdot 5)^{1/4}] \\ &= 5^{1/4} + 6(81^{1/4} \cdot 5^{1/4}) \\ &= 5^{1/4} + 6(3 \cdot 5^{1/4}) \\ &= (1 + 18)(5^{1/4}) \\ &= 19(5^{1/4}) \end{aligned}$$

$$\begin{aligned}
 46. \sqrt[3]{64r^3t^6} &= \sqrt[3]{4^3r^3(t^2)^3} \\
 &= \sqrt[3]{4^3} \sqrt[3]{r^3} \sqrt[3]{(t^2)^3} \\
 &= 4rt^2
 \end{aligned}$$

$$\begin{aligned}
 48. \sqrt[4]{\frac{k^{16}}{16z^4}} &= \frac{\sqrt[4]{(k^4)^4}}{\sqrt[4]{2^4z^4}} \\
 &= \frac{k^4}{2|z|}
 \end{aligned}$$

$$\begin{aligned}
 50. \sqrt[8]{\frac{n^2p^{-1}}{n^{18}p^7}} &= \sqrt[8]{n^{2-18}p^{-1-7}} \\
 &= \sqrt[8]{n^{-16}p^{-8}} \\
 &= \sqrt[8]{\frac{1}{n^{16}p^8}} \\
 &= \frac{8\sqrt{1}}{\sqrt[8]{n^{16}}\sqrt[8]{p^8}} \\
 &= \frac{1}{n^2|p|}
 \end{aligned}$$

52. Absolute value should be used.

$$\sqrt[6]{\frac{64}{w^6}} = \frac{\sqrt[6]{64}}{\sqrt[6]{w^6}} = \frac{\sqrt[6]{2^6}}{\sqrt[6]{w^6}} = \frac{2}{|w|}$$

