

$$\frac{3^{\frac{12}{5.2}} \cdot 3^{\frac{3}{10}}}{3^{\frac{2.2}{5.2}}} \rightarrow \frac{3^{\frac{5}{10}}}{3^{\frac{4}{10}}} \text{ in clicker} \rightarrow 3^{\frac{1}{10}}$$

@

$$3^{\circ} (1/10)$$

12.3

radicals
 ① Simplify } 12.3
 2) multiply } D1+D2

$$\sqrt[2]{4} \cdot \sqrt[2]{9} \iff \sqrt{36}$$

$$2 \cdot 3 = 6$$

$$6 = 6$$

$$\sqrt{36}$$
$$\sqrt{6^2}$$
$$\textcircled{6}$$

$$\sqrt[3]{125}$$
$$\sqrt[3]{5^3}$$
$$\textcircled{5}$$

$$\sqrt[2]{8} = \sqrt[2]{2^3}$$

$$\sqrt{4 \cdot 2}$$
$$\sqrt{4} \cdot \sqrt{2}$$
$$\textcircled{2\sqrt{2}}$$

$$2\sqrt{2}$$

$$\textcircled{2} \sqrt{72}$$

$$\sqrt{2 \cdot 36}$$

$$\sqrt{2} \sqrt{36}$$

$$\textcircled{6\sqrt{2}}$$

$$\begin{array}{r} 272 \\ 2 \overline{)36} \end{array}$$

$$\textcircled{2} \overline{)18}$$

$$\begin{array}{r} 39 \\ 3 \overline{)12} \\ 3 \end{array}$$

~~6\sqrt{2}~~

$$\textcircled{6\sqrt{2}}$$

cr2

$$\sqrt{2^2 \cdot 3^2 \cdot 2}$$

$$\sqrt{2^2} \cdot \sqrt{3^2} \cdot \sqrt{2}$$

$$2 \cdot 3 \sqrt{2}$$

$$6\sqrt{2}$$

$$\begin{aligned} \textcircled{3} \sqrt{250} &= \sqrt{5 \cdot 50} \\ &= \sqrt{5 \cdot 2 \cdot 25} \\ &= \sqrt{5} \cdot \sqrt{25} \cdot \sqrt{2} \\ &= 5\sqrt{2} \end{aligned}$$

$$\sqrt{98}$$

$$\sqrt{7^2 \cdot 2}$$

$$7\sqrt{2}$$

clicker

$$2 \overline{)98}$$

$$7 \overline{)49}$$

$$7$$

$$\sqrt{x^2} = |x| = \textcircled{X}$$

$$\sqrt[3]{x^3} = X$$

$$\textcircled{4} \sqrt{x^{12}} \rightarrow \sqrt[4]{(x^3)^4} \rightarrow |x^3| = x^3$$

$$\begin{aligned}\sqrt[3]{X^{14}} &= \sqrt[3]{X^{12} \cdot X^2} \\ &= \sqrt[3]{(X^4)^3 \cdot X^2} \\ &= \sqrt[3]{(X^4)^3} \cdot \sqrt[3]{X^2} \\ &= X^4 \sqrt[3]{X^2}\end{aligned}$$

Use same variables are +

$$5 \sqrt{y^{23}} \rightarrow \cancel{4 \sqrt{y^{23}}}$$

$$6 \sqrt{X^{13}}$$

$$5 \sqrt{y^{20} \cdot y^3}$$

$$4 \sqrt{X^{12} \cdot X}$$

$$y^4 \cdot \sqrt{y^3}$$

$$X^2 \cdot \sqrt{X}$$

Simplify

$$\textcircled{3} \sqrt[3]{32x^7y^{14}}$$

$$\sqrt[3]{\overset{3}{\underbrace{2^3}} \cdot \overset{2}{\underbrace{2^2}} \cdot \overset{6}{\underbrace{x^6}} \cdot \overset{12}{\underbrace{y^{12}}} \cdot \overset{2}{\underbrace{y^2}}}$$

$$\sqrt[3]{2^2 x^4 y^3} \sqrt[3]{4x^2 y^2}$$

$$\begin{array}{r} 2 \overline{) 32} \\ \underline{2} \\ 2 \overline{) 6} \\ \underline{2} \\ 2 \overline{) 8} \\ \underline{2} \\ 2 \overline{) 4} \\ \underline{2} \\ 2 \end{array}$$

Multiply

$$\sqrt{10} \cdot \sqrt{6}$$

$$\sqrt{5 \cdot 2 \cdot 2 \cdot 3}$$

$$2\sqrt{15}$$

$$= \sqrt{2} \sqrt{60}$$

$$= \sqrt{2^2 \cdot 15}$$

$$= 2\sqrt{15}$$

$$\begin{array}{r} 2 \overline{) 60} \\ \underline{20} \\ 230 \\ \underline{210} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

$$\sqrt[3]{4x^5} \cdot \sqrt[3]{50x^2}$$

~~$$\sqrt[3]{200x^7}$$~~

~~$$\sqrt[3]{2^3 \cdot 25 \cdot x^6 \cdot x}$$~~

$$2x^2 \sqrt[3]{25x}$$

~~$$\begin{array}{r} 2 \overline{) 200} \\ \underline{200} \\ 0 \end{array}$$~~
~~$$\begin{array}{r} 2 \overline{) 100} \\ \underline{100} \\ 0 \end{array}$$~~
~~$$\begin{array}{r} 2 \overline{) 50} \\ \underline{50} \\ 0 \end{array}$$~~

$$\begin{array}{r} 5 \overline{) 25} \\ \underline{25} \\ 0 \end{array}$$

Simplify

$$\sqrt{50x^3} \cdot \sqrt{18x^5}$$

$$\sqrt{25 \cdot 2 \cdot 2 \cdot 9 \cdot x^8}$$

$$5 \cdot 2 \cdot 3 x^4$$
$$30x^4$$

$$\sqrt[5]{8x^4y^6z^2} \cdot \sqrt[5]{8x^1y^7z^4}$$

$$\sqrt[5]{2^3 \cdot 2 \cdot 2 \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot z \cdot z \cdot z \cdot z \cdot z}$$

$$2x^2y^7z^5 \sqrt[5]{2y^3z}$$

$$\sqrt[3]{(x-6)^4} \cdot \sqrt[3]{(x-6)^7}$$

$$\sqrt[3]{(x-6)^8}$$

~~$$\sqrt[3]{(x-6)^6} (x-6)^2$$~~

$$(x-6)^2 \sqrt[3]{(x-6)^2}$$

$$\sqrt{3x^2 - 6x + 3}$$

$$\sqrt{3(x^2 - 2x + 1)}$$

$$\sqrt{3 \cdot (x-1)^2}$$

$$\sqrt{3} \sqrt{(x-1)^2}$$

~~Assume x is~~

any Real #

$$|x-1| \sqrt{3}$$