$$\frac{\sqrt{56x^5y^6}}{\sqrt{2y^4}} = \sqrt{\frac{56x^5y^6}{2y^4}}$$

$2 \mid 28$
$2 \mid 14$
7

$$= \sqrt{28x^5y^{6-4}} = \sqrt{28x^5y^2}$$

$$= \sqrt{2^2 \cdot 7 \cdot x^5 \cdot y^2}$$

$$= \sqrt{2 \cdot 2 \cdot 7 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y}$$

$$= 2 \cdot x \cdot x \cdot y \sqrt{7x} = 2x^2y\sqrt{7x}$$

$$\sqrt{28x^5y^2} = \sqrt{2^2 \cdot 7 \cdot x^{4+1} \cdot y^2} = \sqrt{2^2 \cdot 7 \cdot x^4 \cdot x^1 \cdot y^2}$$

$$\boxed{\sqrt{x} = x^{\frac{1}{2}}}$$

$$= 2^{\frac{2}{2}} \cdot x^{\frac{4}{2}} \cdot y^{\frac{2}{2}} \sqrt{7x}$$

$$= 2x^2y\sqrt{7x}$$

$$\sqrt{49x^{10}} = 7|x^5|$$

$$\sqrt[3]{\frac{x^{12}}{27y^6}} = \sqrt[3]{\frac{x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x\cdot x}{3\cdot 3\cdot 3\cdot y\cdot y\cdot y\cdot y\cdot y\cdot y}}$$

$$\sqrt[3]{x} = x^{\frac{1}{3}} \qquad = \frac{x\cdot x\cdot x\cdot x}{3\cdot y\cdot y} = \frac{x^4}{3y^2}$$

$$\sqrt[3]{\frac{x^{12}}{3^3 y^6}} = \frac{x^{\frac{12}{3}}}{3^{3/3}\cdot y^{6/3}} = \frac{x^4}{3\cdot y^2} = \frac{x^4}{3y^2}$$

$$27^{-\frac{4}{3}} = \frac{1}{27^{\frac{4}{3}}} = \frac{1}{(27^4)^{1/3}} = \frac{1}{(27^{\frac{1}{3}})^4}$$

No help

$$= \frac{1}{(\sqrt[3]{3^3})^4} = \frac{1}{(3)^4} = \boxed{\frac{1}{81}}$$

OR

$$= \frac{1}{((3^3)^{1/3})^4}$$

$$\begin{array}{r|l} 3 & 27 \\ 3 & 9 \\ & 3 \end{array}$$

$$\frac{\left(-3x^{\frac{3}{4}}\right)^5}{x^{-\frac{2}{7}}} = \frac{(-3)^5\left(x^{\frac{3}{4}}\right)^5}{x^{-2/7}}$$

$$\left(x^{\frac{3}{4}}\right)^5 = x^{\frac{3}{4}\cdot 5} = x^{\frac{15}{4}}$$

You're like me, Loco.
You're like me: loco.

$$3x^{\frac{3}{4}} \neq (3x)^{\frac{3}{4}}$$

$$\frac{-243x^{\frac{15}{4}}}{x^{-\frac{2}{7}}} = -243x^{\frac{15}{4}-\left(-\frac{2}{7}\right)}$$

$$= -243x^{\frac{15}{4}+\frac{2}{7}} = \boxed{-243x^{\frac{113}{28}}}$$

$$\frac{15}{4}+\frac{2}{7} = \frac{15}{4}\cdot\frac{7}{7} + \frac{2}{7}\cdot\frac{4}{4} = \frac{105+8}{28} = \frac{113}{28}$$

$$\boxed{\frac{\sqrt[3]{y^2}}{\sqrt[7]{y}} \cdot \frac{\sqrt[7]{y^6}}{\sqrt[7]{y^6}} = \frac{\sqrt[3]{y^2}\sqrt[7]{y^6}}{\sqrt[7]{y^7}} = \quad \text{No help.}}$$

LCD = 21

$$\frac{y^{\frac{2}{3}}}{y^{\frac{1}{7}}} = y^{\frac{2}{3}-\frac{1}{7}} = y^{\frac{11}{21}}$$

$$\frac{2}{3}\cdot\frac{7}{7} - \frac{1}{7}\cdot\frac{3}{3} = \frac{14}{21} - \frac{3}{21} = \frac{11}{21}$$

$$= \sqrt[21]{y^{11}}$$ as radical expression.

$$3\sqrt{32} + 2\sqrt{18}$$

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

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

$$= 12\sqrt{2} + 6\sqrt{2} = 18\sqrt{2}$$

2 | 32
2 | 16
2 | 8
2 | 4
2

2 | 18
3 | 9
3

$$3\sqrt{32} + 2\sqrt{18}$$

$$= 3\sqrt{2^5} + 2\sqrt{2\cdot 3^2}$$

$$= 3\sqrt{2^{4+1}} + 2\cdot 3^1\sqrt{2}$$

$$= 3\sqrt{2^4\cdot 2^1} + 6\sqrt{2}$$

$$= 3\cdot 2^{\frac{4}{2}}\sqrt{2} + 6\sqrt{2}$$

$$= 3\cdot 2^2\sqrt{2} + 6\sqrt{2}$$

$$= 12\sqrt{2} + 6\sqrt{2}$$

8.2 # ~~32~~ 31

$10y^2 + 10y + 3 = 0$

$a = 10,\ b = 10,\ c = 3$

#33

$x(6x+2) = 3$

$6x^2 + 2x - 3 = 0$

$a = 6,\ b = 2,\ c = -3$

$b^2 - 4ac = 2^2 - 4(6)(-3)$

$= 4 + 72$

$= 76$

$$\begin{array}{r|l} 2 & 76 \\ \hline 2 & 38 \\ \hline & 19 \end{array}$$

$\Longrightarrow \sqrt{76} = 2\sqrt{19}$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-2 \pm \sqrt{76}}{2(6)} = \frac{-2 \pm 2\sqrt{19}}{2 \cdot 6}$$

$$= \frac{\cancel{2}(-1 \pm 1\sqrt{19})}{\cancel{2}(6)} = \boxed{\frac{-1 \pm \sqrt{19}}{6}}$$