b) $\left(3\sqrt{12} + 2\sqrt{48}\right) : \sqrt[4]{3} \Rightarrow$

$\left(3 \cdot 2\sqrt{3} + 2 \cdot 4\sqrt{3}\right) : \sqrt[4]{3} \Rightarrow$

$\left(6\sqrt{3} + 8\sqrt{3}\right) : \sqrt[4]{3} \Rightarrow$

$14\sqrt{3} : \sqrt[4]{3} \Rightarrow$

$\dfrac{14\sqrt[4]{3^2}}{\sqrt[4]{3}} \Rightarrow 14\sqrt[4]{3} \;/\!/$

c) $\left(3\sqrt{18} + 2\sqrt{8} + 3\sqrt{32} - \sqrt{50}\right) \cdot \sqrt[4]{2}$

$\left(3 \cdot 3\sqrt{2} + 2 \cdot 2\sqrt{2} + 3 \cdot 4\sqrt{2} - 5\sqrt{2}\right) \cdot \sqrt[4]{2}$

$\left(9\sqrt{2} + 4\sqrt{2} + 12\sqrt{2} - 5\sqrt{2}\right) \cdot \sqrt[4]{2}$

$20\sqrt[2 \cdot 2]{2^2} \cdot \sqrt[4]{2} \Rightarrow$

$\Rightarrow 20\sqrt[4]{2^3} \;/\!/\!/$

d) $\left(\sqrt{8} + \sqrt[3]{12} + \sqrt[4]{4}\right) : \sqrt{2} \Rightarrow$

$\left(2\sqrt{2} + \sqrt[3]{2^2 \cdot 3} + \sqrt[4]{2^2}\right) : \sqrt{2} \Rightarrow$

$\Rightarrow \left(2\sqrt{2} + \sqrt[3]{2^2 \cdot 3} + \sqrt{2}\right) : \sqrt{2} \Rightarrow$

$\left(3\sqrt{2} + \sqrt[3]{2^2 \cdot 3}\right) : \sqrt{2} \Rightarrow$

$\left(3\sqrt[6]{2^3} + \sqrt[6]{(2^2 \cdot 3)^2}\right) : \sqrt[6]{2^3} \Rightarrow$

$\dfrac{\left(3\sqrt[6]{2^3} + \sqrt[6]{2^4 \cdot 3^2}\right)}{\sqrt[6]{2^3}} \Rightarrow$

$\dfrac{\sqrt[6]{2^3} \cdot \left(3\sqrt[6]{2} \cdot \sqrt[6]{3^2} + 3\right)}{\sqrt[6]{2^3}}$

$3 + \sqrt[6]{2 \cdot 9} \Rightarrow 3 + \sqrt[6]{18} \;/\!/$

a) $\left(\sqrt[n+3]{\sqrt[n-1]{a^2}} \cdot \sqrt[n+1]{a^{-1}}\right)^{n^2-1} \Rightarrow$

$\left(\sqrt[n+3]{a^{\frac{2}{n-1}}} \cdot a^{-\frac{1}{n+1}}\right)^{n^2-1} \Rightarrow$

$\dfrac{2}{n-1} + \left(-\dfrac{1}{n+1}\right) = \dfrac{2(n+1) - (n-1)}{(n-1)(n+1)} \Rightarrow$

$\dfrac{2n+2 - n + 1}{(n-1)(n+1)} \Rightarrow \dfrac{n+3}{(n-1)(n+1)}$

$\left(\sqrt[n+3]{a^{\frac{n+3}{(n-1)(n+1)}}}\right)^{n^2-1}$

$\left(a^{\frac{n+3}{(n-1)(n+1)} \cdot \frac{1}{n+3}}\right)^{n^2-1} \Rightarrow \left(a^{\frac{n+3}{(n-1)(n+1)} \cdot \frac{1}{n+3}}\right)^{n^2-1}$

$\left(a^{\frac{1}{(n-1)(n+1)}}\right)^{n^2-1}$

$a^{\frac{n^2-1}{(n-1)(n+1)}} = a^1 \;/\!/\!/$