1) $\frac{2\sqrt{12}+\sqrt{24}}{\sqrt{6}} = \frac{4\sqrt{3}+2\sqrt{6}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{4\sqrt{18}+12}{6} = \frac{12\sqrt{2}+12}{6} =$

$= \frac{2\cancel{12}(\sqrt{2}+1)}{\cancel{6}} = 2(\sqrt{2}+1)$

2) $\frac{4+4\sqrt{5}}{\sqrt{2}} - 2\sqrt{5} = \frac{4(1+\sqrt{5})}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} - 2\sqrt{5}$

$\frac{4\sqrt{2}(1+\sqrt{5})}{2} - 2\sqrt{5} = \frac{4\sqrt{2}+4\sqrt{10}-4\sqrt{5}}{2} =$

$= \frac{^{2}\cancel{4}(\sqrt{2}+\sqrt{10}-\sqrt{5})}{\cancel{4}} = 2(\sqrt{2}+\sqrt{10}-\sqrt{5})$

oppure: $\frac{4+4\sqrt{5}-2\sqrt{10}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}+4\sqrt{10}-2\sqrt{20}}{2} =$

$= \frac{4\sqrt{2}+4\sqrt{10}-4\sqrt{5}}{2} = \frac{^{2}\cancel{4}(\sqrt{2}+\sqrt{10}-\sqrt{5})}{\cancel{4}} =$

$= 2(\sqrt{2}+\sqrt{10}-\sqrt{5})$

3) $\frac{\cancel{10\sqrt{2}} - 42\sqrt{2} + 6\sqrt{2} - \cancel{10\sqrt{2}}}{2\sqrt{2}} = \frac{-36\cancel{\sqrt{2}}}{2\cancel{\sqrt{2}}} = -18$

8.2.

4) $\frac{2}{\sqrt[3]{5^4}} = \frac{2}{5\sqrt[3]{5}} \cdot \frac{\sqrt[3]{5^2}}{\sqrt[3]{5^2}} = \frac{2 \cdot \sqrt[3]{5^2}}{5 \cdot \sqrt[3]{5^3}} = \frac{2\sqrt[3]{5^2}}{5^2}$

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5) $\frac{1}{1+\sqrt{2}} \cdot \frac{1-\sqrt{2}}{1-\sqrt{2}} = \frac{1-\sqrt{2}}{-1} = \sqrt{2} - 1$

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6) $\frac{2\sqrt{3}}{\sqrt{6}-2} - \frac{5\sqrt{6}}{\sqrt{2}-2\sqrt{3}} =$

$= \frac{2\sqrt{3}}{\sqrt{6}-2} \cdot \frac{\sqrt{6}+2}{\sqrt{6}+2} - \frac{5\sqrt{6}}{\sqrt{2}-2\sqrt{3}} \cdot \frac{\sqrt{2}+2\sqrt{3}}{\sqrt{2}+2\sqrt{3}} =$

$= \frac{2\sqrt{18}+4\sqrt{3}}{6-4} - \frac{5\sqrt{12}+10\sqrt{18}}{2-12} =$

$= \frac{6\sqrt{2}+4\sqrt{3}}{2} \oplus \frac{10\sqrt{3}+30\sqrt{2}}{\oplus 10} = \frac{\cancel{2}(3\sqrt{2}+2\sqrt{3})}{\cancel{2}} + \frac{\cancel{10}(\sqrt{3}+3\sqrt{2})}{\cancel{10}} =$

$= 3\sqrt{2}+2\sqrt{3}+\sqrt{3}+3\sqrt{2} = 6\sqrt{2}+3\sqrt{3} = 3(2\sqrt{2}+\sqrt{3})$