Simplifying RADICALS!!!!

Ex 1.
$$\sqrt{32} - \sqrt{24} + 8\sqrt{2} - \sqrt{54}$$

= $\sqrt{6 \cdot 2} - \sqrt{4 \cdot 6} + 8\sqrt{2} - \sqrt{9 \cdot 6}$
= $4\sqrt{2} - 2\sqrt{6} + 8\sqrt{2} - 3\sqrt{6}$
= $\left(12\sqrt{2} - 5\sqrt{6}\right)$

Ex. 2
$$\sqrt[3]{16} + \sqrt[3]{24}$$
 You need to recall your perfect cubes! 1, 8, 27, 64, 125, 216, 343, 512, 729, 1000, etc.

Ex. 3
$$3\sqrt[3]{250} - 5\sqrt[3]{54}$$

= $3 \cdot \sqrt[3]{125} \cdot \sqrt[3]{2} - 5\sqrt[3]{2} - 5\sqrt[3]{2}$

= $15\sqrt[3]{2} - 15\sqrt[3]{2}$

Ex. 4
$$\sqrt{\frac{3}{4}} - \frac{\sqrt{3}}{\sqrt{4}} - \frac{\sqrt{3}}{2}$$

Ex. 5
$$\sqrt[3]{\frac{3}{4}} = \frac{\sqrt[3]{3}}{\sqrt[3]{4}} = \frac{\sqrt[3]{3}}{\sqrt[3]{4}} = \frac{\sqrt[3]{3}}{\sqrt[3]{4}} = \frac{\sqrt[3]{3}}{\sqrt[3]{4}} = \frac{\sqrt[3]{3}}{\sqrt[3]{4}} = \frac{\sqrt[3]{3}}{\sqrt[4]{4}} = \frac{\sqrt[4]{3}}{\sqrt[4]{4}} = \frac{\sqrt[4]{3}}{\sqrt[4]{4}} = \frac{\sqrt[4]{3}}{\sqrt[4]{2}} = \frac{\sqrt[4]{3}}{\sqrt[4]{3}} = \frac{\sqrt[4]{3}}{\sqrt[4]{3}}$$

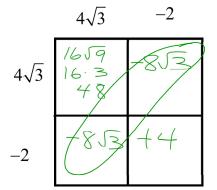
Ex. 6
$$\sqrt[4]{\frac{3}{4}} = \frac{\sqrt[4]{3}}{\sqrt[4]{4}} = \frac{\sqrt[4]{3}}{\sqrt[4]{2^2}} \cdot \frac{\sqrt[4]{2^2}}{\sqrt[4]{2^2}} = \frac{\sqrt[4]{2}}{\sqrt[4]{2^2}} = \frac{\sqrt[4]{2}}{\sqrt[4]{2}} = \frac{\sqrt[4]{2}}{\sqrt[4]{2}}$$

Ex. 7
$$\sqrt[5]{\frac{3}{4}} = \frac{5\sqrt{3}}{\sqrt[5]{2^2}} \cdot \frac{5\sqrt{2^3}}{\sqrt[5]{2^5}} = \frac{5\sqrt[5]{2^4}}{\sqrt[5]{2^5}}$$

Ex. 8
$$(3\sqrt{2}+5)(\sqrt{6}-3)$$
 = $(6\sqrt{3}+5\sqrt{6}-9\sqrt{2}-15)$

$$3\sqrt{2} \begin{array}{c} 3\sqrt{12} & -9\sqrt{2} \\ 3\sqrt{4\cdot 3} & \\ 6\sqrt{3} & \\ 6\sqrt{3} & \\ -15 & \\ +5 & \\ \end{array}$$

Ex. 9
$$(4\sqrt{3}-2)^2$$



$$-[52-16\sqrt{3}]$$