Raices

I) Reducir:

a) $\sqrt{9}+\sqrt{16}+\sqrt{4}$

b) $\sqrt{25}+\sqrt{144}-\sqrt{16}$

c) $\sqrt{1,21}+\sqrt{0,49}+\sqrt{0,64}$

d) $3\sqrt{25+25a}+2\sqrt{16+16a}+5\sqrt{36+36a}$

e) $2\sqrt{704a}+5\sqrt{891a}-\frac{3}{14}\sqrt{539a}$

f) $\sqrt{54}-\sqrt{6}+\sqrt{24}$

g) $\sqrt{300}+\sqrt{48}-\sqrt{75}$

h) $3\sqrt{20}+4\sqrt{45}-2\sqrt{80}-\sqrt{180}$

i) $5\sqrt{8}+4\sqrt{72}-3\sqrt{18}-\sqrt{50}$

j) $\frac{2}{3}\sqrt{81a^4b}-\frac{1}{2}\sqrt{64a^4b}+\frac{3}{4}\sqrt{256a^4b}$

II) Resuelve estas multiplicaciones

$(3+\sqrt{5})(3-\sqrt{5})$

$(\sqrt{15}+\sqrt{17})(\sqrt{15}-\sqrt{17})$

$(a+\sqrt{b})(a-\sqrt{b})$

$(a\sqrt{x}-b\sqrt{y})(a\sqrt{x}+b\sqrt{y})$

$(\sqrt{5}+\sqrt{3}-1)(\sqrt{5}+\sqrt{3}+1)$

$(3\sqrt{2}+2\sqrt{3})(3\sqrt{2}-2\sqrt{3})$

$(3\sqrt{7}-2\sqrt{2})(3\sqrt{7}+2\sqrt{2})$

$(3\sqrt{a}+\sqrt{b})(3\sqrt{a}-\sqrt{b})$

$(ab\sqrt{a}+\sqrt{b})(ab\sqrt{a}-\sqrt{b})$

$(\sqrt{7}+\sqrt{2})^2$

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

$(\sqrt[3]{5}-\sqrt[3]{2})(\sqrt[3]{25}-\sqrt[3]{10}+\sqrt[3]{4})$

$\left(\sqrt{\sqrt{a}+\sqrt{b}}+\sqrt{\sqrt{a}-\sqrt{b}}\right)^2$

$(2\sqrt{5}+1)(2\sqrt{5}-1)$

$(1+5\sqrt{3})(5\sqrt{3}-1)$

$(2a-\sqrt{2b})(2a+\sqrt{2b})$

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

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

$(3\sqrt{3}+2\sqrt{2})^2$

$(\sqrt[3]{x}-\sqrt[3]{y})(\sqrt[3]{x^2}+\sqrt[3]{xy}+\sqrt[3]{y^2})$

$5\sqrt{a}\,(a-\sqrt{a})^2$

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

$(3\sqrt{75}-2\sqrt{72})^2$

$\left(\sqrt{7-2\sqrt{10}}+\sqrt{7+2\sqrt{10}}\right)^2$

$\left(\sqrt{8+2\sqrt{15}}+\sqrt{8-2\sqrt{15}}\right)^2$

III) Resuelva y simplifique

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

$\sqrt[3]{a^2b^2}\bullet 2\sqrt[4]{3a^3b}$

$\sqrt[3]{2}:\sqrt{2}$

$\frac{1}{2}\sqrt{2x}:\frac{1}{4}\sqrt[6]{16x^4}$

$3\sqrt{2ab}\bullet 4\sqrt[4]{8a^3}$

$\sqrt[4]{25x^2y^3}\bullet\sqrt[6]{125x^2}$

$\sqrt{9x}:\sqrt[3]{3x^2}$

$\sqrt[3]{5m^2n}:\sqrt[5]{m^3n^2}$

$\sqrt[3]{9x^2y}\bullet\sqrt[6]{81x^5}$

$\frac{2}{3}\sqrt[3]{4m^2}\bullet\frac{3}{4}\sqrt[5]{16m^4n}$

$\sqrt[3]{8a^3b}:\sqrt[4]{4a^2}$

$\sqrt[6]{18x^3y^4z^5}:\sqrt[4]{3x^2y^2z^3}$

IV) Racionalizar

$\frac{5}{4\sqrt{3a}}$ $\quad$ $\frac{3a}{\sqrt{5}}$ $\quad$ $\frac{a^2}{\sqrt[3]{a}}$

$\frac{3}{\sqrt[4]{2}}$ $\quad$ $\frac{2\sqrt{5}-\sqrt{7}}{2\sqrt{5}+\sqrt{7}}$ $\quad$ $\frac{a\sqrt{b}-b\sqrt{a}}{a\sqrt{b}+b\sqrt{a}}$

$\frac{\sqrt{30}}{2\sqrt{5}+3\sqrt{2}-2\sqrt{3}}$ $\quad$ $\frac{6}{5\sqrt[3]{3x}}$ $\quad$ $\frac{3-\sqrt{2}}{1+\sqrt{2}}$

$\frac{\sqrt{x}-\sqrt{x-1}}{\sqrt{x}+\sqrt{x-1}}$ $\quad$ $\frac{19}{5\sqrt{2}-4\sqrt{3}}$ $\quad$ $\frac{2-\sqrt{3}}{2+\sqrt{3}+\sqrt{5}}$

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

VI) Determina una aproximación con cuatro decimales de estas raices

$\sqrt{626}$	$\sqrt{124}$
$\sqrt{17}$	$\sqrt{50}$
$\sqrt{2}$	$\sqrt{73}$
$\sqrt{5}$	$\sqrt{38}$
$\sqrt{82}$	$\sqrt{0,26}$