

Ejercicios página 44 "piensa y practica"

1) a) $\sqrt[5]{x} = x^{\frac{1}{5}}$; b) $(\sqrt[3]{x^2})^5 = \sqrt[3]{x^{10}} = x^{\frac{10}{3}}$; c) $\sqrt[15]{a^6} = a^{\frac{6}{15}} = a^{\frac{2}{5}}$

d) $\sqrt[2]{\frac{a^{13}}{a^6}} = \frac{\sqrt[2]{a^{13}}}{\sqrt[2]{a^6}} = \frac{a^{\frac{13}{2}}}{a^{\frac{6}{2}}} = a^{(\frac{13}{2} - \frac{6}{2})} = a^{\frac{7}{2}}$

e) $\sqrt[3]{\sqrt[2]{x}} = \sqrt[6]{x} = x^{\frac{1}{6}}$; f) $\sqrt[n]{\sqrt[m]{a^k}} = \sqrt[n \cdot m]{a^k} = a^{\frac{k}{n \cdot m}}$

2) a) $4^{\frac{1}{2}} = \sqrt{4} = 2$; b) $125^{\frac{1}{3}} = \sqrt[3]{125} = 5$

c) $625^{\frac{1}{4}} = \sqrt[4]{625} = 5$; d) $8^{\frac{2}{3}} = \sqrt[3]{8^2} = \sqrt[3]{64} = 4$

e) $64^{\frac{5}{6}} = (2^6)^{\frac{5}{6}} = 2^{(6 \cdot \frac{5}{6})} = 2^5 = 32$

f) $36^{\frac{3}{2}} = (6^2)^{\frac{3}{2}} = 6^{(2 \cdot \frac{3}{2})} = 6^3 = 216$

3) a) $x^{\frac{7}{9}} = \sqrt[9]{x^7}$ b) $(m^5 \cdot n^5)^{\frac{1}{3}} = \sqrt[3]{(m \cdot n)^5}$

c) $a^{\frac{1}{2}} \cdot b^{\frac{1}{3}} = \sqrt[2]{a} \cdot \sqrt[3]{b}$; d) $[(x^2)^{\frac{1}{3}}]^{\frac{1}{5}} = x^{(2 \cdot \frac{1}{3} \cdot \frac{1}{5})} = x^{\frac{2}{15}} = \sqrt[15]{x^2}$

e) $[(x^{\frac{1}{2}})^5]^{\frac{1}{3}} = x^{(\frac{1}{2} \cdot 5 \cdot \frac{1}{3})} = x^{\frac{5}{6}} = \sqrt[6]{x^5}$

f) $(y^3 \cdot z^2)^{\frac{2}{3}} = \sqrt[3]{(y^3 \cdot z^2)^2} = \sqrt[3]{y^6 \cdot z^4}$