

Corrección 1ª Control - 1ª Evaluación Matemáticas - 4º ESO 04-10-18

1) a) $5(2\sqrt{2}) - 2(3\sqrt{2}) + \frac{3}{4}(4\sqrt{2}) + \frac{1}{5}(5\sqrt{2}) =$
 $= 10\sqrt{2} - 6\sqrt{2} + 3\sqrt{2} + \sqrt{2} = \boxed{7\sqrt{2}}$

b) $\sqrt[4]{\sqrt[3]{16}} = \sqrt[12]{24} = \boxed{\sqrt[3]{2}}$

c) $\sqrt[4]{3^3} \cdot \sqrt[3]{3^2} = \sqrt[12]{3^9 \cdot 3^8} = \sqrt[12]{3^{17}} = \boxed{3\sqrt[3]{3^5}}$

d) $\frac{3\sqrt{6}}{\sqrt[3]{3^2}} \cdot \frac{\sqrt[3]{3}}{\sqrt[3]{3}} = \frac{\sqrt[6]{6^3 \cdot 3^5}}{\cancel{3}} = \boxed{\sqrt[6]{2^3 \cdot 3^5}}$

e) $\frac{2\sqrt{2}}{5-2\sqrt{2}} \cdot \frac{5+2\sqrt{2}}{5+2\sqrt{2}} = \frac{10\sqrt{2}+8}{25-8} = \boxed{\frac{8+10\sqrt{2}}{17}}$

f) $(3-2\sqrt{2})^2 = 9 - 12\sqrt{2} + 8 = \boxed{17-12\sqrt{2}}$

2) a) $\log_x 8 = 3 \rightarrow x^3 = 8 \rightarrow x = \sqrt[3]{8} \rightarrow \boxed{x=2}$

b) $\log_2 x = -1 \rightarrow x = 2^{-1} \rightarrow \boxed{x=1/2}$

c) $\log_{0.5} 8 = x \rightarrow \left(\frac{1}{2}\right)^x = 8 \rightarrow 2^{-x} = 2^3 \rightarrow \boxed{x=-3}$

d) $\log_{0.25} \sqrt{2^x} = -4 \rightarrow \left(\frac{1}{4}\right)^{-4} = 2^{x/2} \rightarrow 2^{-8} = 2^{x/2} \rightarrow \boxed{x=-16}$

3) a) $\log A = \log \frac{x^3 \sqrt{z}}{y^2} = 3\log x + \frac{1}{2}\log z - 2\log y$

b) $\log B = \log \frac{10x^3}{y^2 z} = 1 + 3\log x - 2\log y - \log z$

$$c) \log C = \log \frac{y\sqrt{x}}{10z} = \log y + \frac{1}{2} \log x - 1 - \log z$$

$$a) \log A = \log \frac{x^2}{y^3z} \rightarrow \boxed{A = \frac{x^2}{y^3z}}$$

$$b) \log B = \log \frac{\sqrt{x}}{y^2z^2} \rightarrow \boxed{B = \frac{\sqrt{x}}{y^2z^2}}$$

$$c) \log C = \log \frac{10\sqrt[3]{z}}{xy^3} \rightarrow \boxed{C = \frac{10\sqrt[3]{z}}{xy^3}}$$