

GUÍA 3

Ejercicios 6-7 \rightarrow III b.1.1 - b y e

\rightarrow III c.1.1 - d

\rightarrow III i.1.1 - d y f

\rightarrow III j.1.1 - b

\rightarrow III k.1.1 - e

III b.1.1

⑥ $(-1 + \sqrt{2})(2 - \sqrt{2}) + 4 \rightarrow$ APLICAMOS DISTRIBUTIVA

$$-2 + \sqrt{2} + 2\sqrt{2} - (\sqrt{2})^2 + 4$$

$$-2 + \sqrt{2} + 2\sqrt{2} - 2 + 4 \Rightarrow 3\sqrt{2}$$

⑦ $\{ [(-4 - 68) : (19 - 3) + 3 + 5(3 - 4) - (5 - 1)] : (3 - 5) \} : 2$

$$\{ [(-72) : (16) + 3 - 5 - 4] : (-2) \} : 2$$

$$\{ [-21] : (-2) \} : 2$$

$$\left\{ \frac{-21}{2} \cdot \left(-\frac{1}{2} \right) \right\} : 2$$

$$\frac{+21}{4} \cdot \frac{1}{2} \Rightarrow \frac{+21}{8}$$

$$\frac{9}{2} - 16 \frac{9-12}{2} = -\frac{3}{2}$$

$$\frac{-9}{2} + 3 - 5 - 4 = \frac{-9+6-10-8}{2}$$

III. c. 1.1

d) $4^{-3} \cdot 4^8 \cdot (4^2)^3$ $\Rightarrow 4^{-3+8+6}$ $\Rightarrow 4^{-3+8+6-9-5}$ $\Rightarrow 4^{-3}$ $\Rightarrow \frac{1}{4^3} \Rightarrow \boxed{\frac{1}{64}}$

Reduccion y adición de exponentes

III. u. 1.1

d) $\sqrt[6]{\frac{1}{2} \cdot \frac{1}{3}}$ $\Rightarrow \sqrt[6]{\left(\frac{1}{2}\right)^3 \left(\frac{1}{3}\right)^2}$

$\Rightarrow \sqrt[6]{\frac{1}{8^3} \cdot \frac{1}{3^2}} \Rightarrow \sqrt[6]{\frac{1}{8^3} \cdot \frac{1}{9^2}} \Rightarrow \sqrt[6]{\frac{1}{72^5}}$

$\Rightarrow \frac{\sqrt[6]{1}}{\sqrt[6]{72^5}} \Rightarrow \frac{1}{\sqrt[6]{72^5}}$ \rightarrow Razonalizamos $\frac{a}{\sqrt[n]{b}} \cdot \frac{\sqrt[n]{b^{n-1}}}{\sqrt[n]{b^{n-1}}}$

$= \frac{1}{\sqrt[6]{72}} \cdot \frac{\sqrt[6]{72^5}}{\sqrt[6]{72^5}} = \frac{\sqrt[6]{72^5}}{\sqrt[6]{72^6}} \Rightarrow \boxed{\frac{\sqrt[6]{72^5}}{72}}$

f) $\sqrt{54 \cdot 6^2 \cdot x^9}$

$\Rightarrow \sqrt{9 \cdot 6 \cdot 6^2 \cdot x^9} \Rightarrow \sqrt{9} \cdot \sqrt{6} \cdot \sqrt{6^2} \cdot \sqrt{x^9}$

$\Rightarrow 3 \cdot \sqrt{6} \cdot 6 \cdot x^3 \cdot \sqrt{x^2}$

$\Rightarrow 36x^3 \sqrt{6x^2}$

C.A

$54 = 9 \cdot 6$, $\sqrt{x^9} = \sqrt{x^{2 \cdot 6}} = \sqrt{x^2 \cdot x^2 \cdot x^2}$

$= \sqrt{x^2} \cdot \sqrt{(x^2)^2} = \sqrt{x^2} \cdot x^2$

III. j. 1.1

b) $\left(\frac{1}{9}\right)^{-\frac{1}{2}} = \left(\frac{1}{3^2}\right)^{-\frac{1}{2}} = (1)^{-\frac{1}{2}} \cdot (3^2)^{\frac{1}{2}} = (1)^{\frac{1}{2}} \cdot 3 = 1 \cdot 3 = \boxed{3}$

III. k. 1.1

e) $\frac{3+\sqrt{2}}{3-\sqrt{2}} \Rightarrow \frac{3+\sqrt{2}}{3-\sqrt{2}} \cdot \frac{3+\sqrt{2}}{3+\sqrt{2}}$

$\Rightarrow \frac{(3+\sqrt{2})^2}{(3-\sqrt{2})(3+\sqrt{2})} \Rightarrow \frac{3^2 + 2 \cdot 3\sqrt{2} + (\sqrt{2})^2}{9 + 3\sqrt{2} - 3\sqrt{2} - (\sqrt{2})^2}$

$\Rightarrow \frac{9 + 6\sqrt{2} + 2}{7} \Rightarrow \boxed{\frac{11 + 6\sqrt{2}}{7}}$