

Boletín IV Repaso Tema II (Radicales) – Matemáticas 4º

3. Racionaliza.(Solución)

$$a. \frac{2}{\sqrt[3]{2^8}} = \frac{2}{\sqrt[3]{2^8}} \cdot \frac{\sqrt[3]{2}}{\sqrt[3]{2}} = \frac{2 \cdot \sqrt[3]{2}}{\sqrt[3]{2^{8+1}}} = \frac{2 \cdot \sqrt[3]{2}}{\sqrt[3]{2^9}} = \frac{2 \cdot \sqrt[3]{2}}{2^3} = \frac{\sqrt[3]{2}}{4}$$

$$b. \frac{7}{\sqrt[3]{3}} = \frac{7}{\sqrt[3]{3}} \cdot \frac{\sqrt[3]{3^2}}{\sqrt[3]{3^2}} = \frac{7 \cdot \sqrt[3]{3^2}}{\sqrt[3]{3^{1+2}}} = \frac{7 \cdot \sqrt[3]{3^2}}{\sqrt[3]{3^3}} = \frac{7 \cdot \sqrt[3]{3^2}}{3}$$

$$c. \frac{1}{\sqrt[5]{5^{11}}} = \frac{1}{\sqrt[5]{5^{11}}} \cdot \frac{\sqrt[5]{5^4}}{\sqrt[5]{5^4}} = \frac{\sqrt[5]{5^4}}{\sqrt[5]{5^{11+4}}} = \frac{\sqrt[5]{5^4}}{\sqrt[5]{5^{15}}} = \frac{\sqrt[5]{5^4}}{5^3} = \frac{\sqrt[5]{5^4}}{125}$$

$$d. \frac{-5}{\sqrt[3]{6^5}} = \frac{-5}{\sqrt[3]{6^5}} \cdot \frac{\sqrt[3]{6}}{\sqrt[3]{6}} = \frac{-5 \cdot \sqrt[3]{6}}{\sqrt[3]{6^{5+1}}} = \frac{-5 \cdot \sqrt[3]{6}}{\sqrt[3]{6^6}} = \frac{-5 \cdot \sqrt[3]{6}}{6^2} = \frac{-5 \cdot \sqrt[3]{6}}{36}$$

$$e. \frac{-2}{\sqrt[5]{5}} = \frac{-2}{\sqrt[5]{5}} \cdot \frac{\sqrt[5]{5^4}}{\sqrt[5]{5^4}} = \frac{-2 \cdot \sqrt[5]{5^4}}{\sqrt[5]{5^{1+4}}} = \frac{-2 \cdot \sqrt[5]{5^4}}{\sqrt[5]{5^5}} = \frac{-2 \cdot \sqrt[5]{5^4}}{5}$$

4. Racionaliza.(Solución)

$$a. \frac{\sqrt{5}}{-\sqrt{5} + \sqrt{3}} = \frac{\sqrt{5}}{-\sqrt{5} + \sqrt{3}} \cdot \frac{-\sqrt{5} - \sqrt{3}}{-\sqrt{5} - \sqrt{3}} = \frac{-\sqrt{25} - \sqrt{15}}{(-\sqrt{5})^2 - (\sqrt{3})^2} = \frac{-\sqrt{25} - \sqrt{15}}{5 - 3} = \frac{-\sqrt{25} - \sqrt{15}}{2}$$

$$b. \frac{-2}{\sqrt{2} + \sqrt{5}} = \frac{-2}{\sqrt{2} + \sqrt{5}} \cdot \frac{\sqrt{2} - \sqrt{5}}{\sqrt{2} - \sqrt{5}} = \frac{-2\sqrt{2} + 2\sqrt{5}}{(\sqrt{2})^2 - (\sqrt{5})^2} = \frac{-2\sqrt{2} + 2\sqrt{5}}{2 - 5} = \frac{-2\sqrt{2} + 2\sqrt{5}}{-3} = \frac{2\sqrt{2} - 2\sqrt{5}}{3}$$

$$c. \frac{5}{-\sqrt{3} + \sqrt{2}} = \frac{5}{-\sqrt{3} + \sqrt{2}} \cdot \frac{-\sqrt{3} - \sqrt{2}}{-\sqrt{3} - \sqrt{2}} = \frac{-5\sqrt{3} + 5\sqrt{2}}{(-\sqrt{3})^2 + (\sqrt{2})^2} = \frac{-5\sqrt{3} + 5\sqrt{2}}{3 - 2} = -5\sqrt{3} + 5\sqrt{2}$$

$$d. \frac{-1}{-\sqrt{3} - 5} = \frac{-1}{-\sqrt{3} - 5} \cdot \frac{-\sqrt{3} + 5}{-\sqrt{3} + 5} = \frac{\sqrt{3} - 5}{(-\sqrt{3})^2 - 5^2} = \frac{\sqrt{3} - 5}{3 - 25} = \frac{\sqrt{3} - 5}{-22} = -\frac{\sqrt{3} - 5}{22}$$

$$e. \frac{3}{\sqrt{3} + 2} = \frac{3}{\sqrt{3} + 2} \cdot \frac{\sqrt{3} - 2}{\sqrt{3} - 2} = \frac{3\sqrt{3} - 6}{(\sqrt{3})^2 - 2^2} = \frac{3\sqrt{3} - 6}{3 - 4} = \frac{3\sqrt{3} - 6}{-1} = -3\sqrt{3} + 6$$

$$f. \frac{-\sqrt{3} - 2}{\sqrt{7} - 4} = \frac{-\sqrt{3} - 2}{\sqrt{7} - 4} \cdot \frac{\sqrt{7} + 4}{\sqrt{7} + 4} = \frac{-\sqrt{21} - 4\sqrt{3} - 2\sqrt{7} - 8}{(\sqrt{7})^2 - 4^2} = \frac{-\sqrt{21} - 4\sqrt{3} - 2\sqrt{7} - 8}{7 - 16} =$$

$$= \frac{-\sqrt{21} - 4\sqrt{3} - 2\sqrt{7} - 8}{-9} = \frac{\sqrt{21} + 4\sqrt{3} + 2\sqrt{7} + 8}{9}$$