

TEMA 1.

1. (1,5) Racionaliza:

b. $\frac{8-\sqrt{12}}{\sqrt{\sqrt{5}-\sqrt{6}}}$

b. $\frac{-7}{\sqrt{13-11+\sqrt{5}}}$

c. $\frac{\sqrt{7}-3}{\sqrt[8]{3^3}}$

2. (1,5) Calcula y expresa el resultado en notación científica:

$$\frac{6,08 \cdot 10^{-5} \cdot (7,38 \cdot 10^3 - 4,17 \cdot 10^{-1})^5}{3,86 \cdot 10^4 + 6,12 \cdot 10^{-2}} =$$

3. (2) Calcula y simplifica:

c. $3^5 \sqrt[5]{768} - \frac{1}{3} \sqrt[5]{9000} + \frac{3}{5} \sqrt[5]{\frac{648}{32}} =$

d. $\sqrt[8]{\frac{\sqrt{288} \sqrt[3]{768} \cdot (\sqrt{192})^5}{\sqrt[6]{384}}}$

4. (2) Representa en la recta real $\sqrt{83}$, $-\frac{61}{7}$, $\frac{35}{8}$, $\sqrt{92}$

5. 1,5) Desarrolla los valores absolutos: $|x-7|$, $|5x+1|$; $|2x-10|$

6. (1,5) Calcula utilizando fracciones generatrices: $3,28 + 7,4\hat{6} - 9,\hat{45} =$

TEMA 1. 1ºB

$$\textcircled{1} \text{ a) } \frac{8-\sqrt{12}}{\sqrt{5}-\sqrt{6}} = \frac{(8-\sqrt{12})(\sqrt{5}-\sqrt{6})}{(\sqrt{5}-\sqrt{6})^2} = \frac{(8-\sqrt{12})(\sqrt{5}-\sqrt{6})}{5-6} = \frac{(8-\sqrt{12})(\sqrt{5}-\sqrt{6})(\sqrt{5}+\sqrt{6})}{(\sqrt{5}-\sqrt{6})(\sqrt{5}+\sqrt{6})} =$$

$$= \frac{(8-\sqrt{12})(\sqrt{5}-\sqrt{6})(\sqrt{5}+\sqrt{6})}{5-6} = \frac{(8-\sqrt{12})(\sqrt{5}-\sqrt{6})(\sqrt{5}+\sqrt{6})}{-1}$$

$$\text{b) } \frac{-7}{\sqrt{13}-11+\sqrt{5}} = \frac{-7[(\sqrt{13}-11)-\sqrt{5}]}{[(\sqrt{13}-11)+\sqrt{5}][(\sqrt{13}-11)-\sqrt{5}]} = \frac{-7[(\sqrt{13}-11)-\sqrt{5}]}{(\sqrt{13})^2+11^2-2\cdot 11\cdot\sqrt{13}-5} =$$

$$= \frac{-7[(\sqrt{13}-11)-\sqrt{5}](129+22\sqrt{13})}{(129-22\sqrt{13})(129+22\sqrt{13})} = \frac{-7[(\sqrt{13}-11)-\sqrt{5}](129+22\sqrt{13})}{10349}$$

$$\textcircled{2} \frac{6,08 \cdot 10^{-5} \cdot (7,38 \cdot 10^3 - 4,17 \cdot 10^{-1})^5}{3,86 \cdot 10^4 + 6,12 \cdot 10^{-2}} = \frac{6,08 \cdot 10^{-5} [73800 \cdot 10^{-1} - 4,17 \cdot 10^{-1}]^5}{3860000 - 10^{-2} + 6,12 \cdot 10^{-2}} =$$

$$= \frac{6,08 \cdot 10^{-5} (73795,83 \cdot 10^{-1})^5}{3860006,12 \cdot 10^{-2}} = \frac{6,08 \cdot 10^{-5} \cdot 2,188563282 \cdot 10^{24} \cdot 10^{-5}}{3,86000612 \cdot 10^6 \cdot 10^{-2}} =$$

$$= \frac{13,3646475 \cdot 10^{14}}{3,86000612 \cdot 10^4} = 3,447265196 \cdot 10^{10}$$

$$\textcircled{3} \text{ a) } 3 \sqrt[5]{768} - \frac{1}{3} \sqrt[5]{9000} + \frac{3}{5} \sqrt[5]{\frac{648}{32}} = 3 \sqrt[5]{2^8 \cdot 3} - \frac{1}{3} \sqrt[5]{2^3 \cdot 3^2 \cdot 5^3} + \frac{3}{5} \sqrt[5]{\frac{2^3 \cdot 3^4}{2^5}} =$$

$$= 3 \cdot 2 \sqrt[5]{2^3 \cdot 3} - \frac{1}{3} \sqrt[5]{2^3 \cdot 3^2 \cdot 5^3} + \frac{3}{5 \cdot 2} \sqrt[5]{2^3 \cdot 3^4} = 6 \sqrt[5]{2^3 \cdot 3} - \frac{1}{3} \sqrt[5]{2^3 \cdot 3^2 \cdot 5^3} + \frac{3}{10} \sqrt[5]{2^3 \cdot 3^4}$$

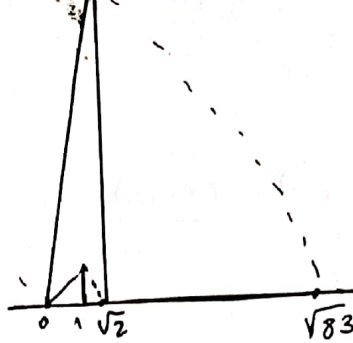
$$\text{b) } \sqrt[8]{\frac{\sqrt{288} \sqrt[3]{768} (\sqrt{192})^5}{6 \sqrt[3]{384}}} = \sqrt[8]{\frac{\sqrt{2^5 \cdot 3^2} \sqrt[3]{2^8 \cdot 3} (\sqrt{2^6 \cdot 3})^5}{6 \sqrt[3]{2^7 \cdot 3}}} = \sqrt[8]{\frac{\sqrt{2^5 \cdot 3^2} \sqrt[3]{2^8 \cdot 3} \sqrt{2^{30} \cdot 3^5}}{6 \sqrt[3]{2^7 \cdot 3}}}$$

$$= \frac{16 \sqrt{2^5 \cdot 3^2} \sqrt[48]{2^8 \cdot 3} \sqrt[32]{2^{30} \cdot 3^5}}{48 \sqrt[3]{2^7 \cdot 3}} = \sqrt[96]{\frac{2^{30} \cdot 3^{12} \cdot 2^{16} \cdot 3^2 \cdot 2^{90} \cdot 3^{15}}{2^{14} \cdot 3^2}} = \sqrt[96]{\frac{2^{136} \cdot 3^{29}}{2^{14} \cdot 3^2}} =$$

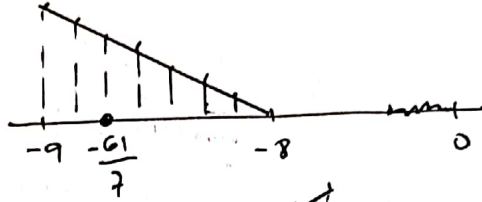
$$= \sqrt[96]{2^{122} \cdot 3^{27}} = 2 \sqrt[24]{2^{26} \cdot 3^{27}}$$

$$\textcircled{4} \quad \sqrt{83} = \sqrt{9^2 + \sqrt{2}^2}$$

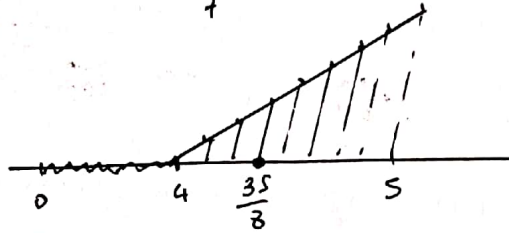
$$\sqrt{2} = \sqrt{1^2 + 1^2}$$



$$-\frac{61}{7} = -8 \cdot \frac{5}{7}$$



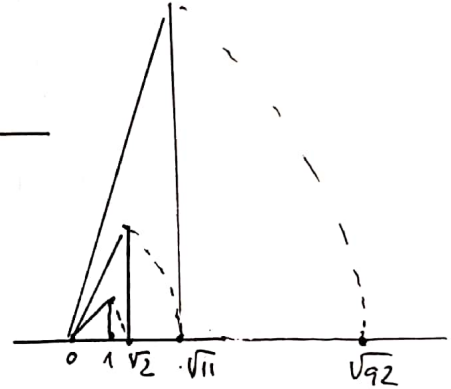
$$\frac{35}{8} = 4 \frac{3}{8}$$



$$\sqrt{92} = \sqrt{9^2 + \sqrt{11}^2}$$

$$\sqrt{11} = \sqrt{3^2 + \sqrt{2}^2}$$

$$\sqrt{2} = \sqrt{1^2 + 1^2}$$



$$\textcircled{5} \quad |x-7| = \begin{cases} x-7 & \text{si } x-7 \geq 0 \\ -x+7 & \text{si } x-7 < 0 \end{cases} = \begin{cases} x-7 & \text{si } x \geq 7 \\ -x+7 & \text{si } x < 7 \end{cases}$$

$$|5x+1| = \begin{cases} 5x+1 & \text{si } x \geq -1/5 \\ -5x-1 & \text{si } x < -1/5 \end{cases}$$

$$|2x-10| = \begin{cases} 2x-10 & \text{si } x \geq 5 \\ -2x+10 & \text{si } x < 5 \end{cases}$$

$$\textcircled{6} \quad N = 3,28 \rightarrow 100N = 328 \Rightarrow N = \frac{328}{100}$$

$$7,4\overline{6} \rightarrow 100N = 746,6\overline{6} \dots$$

$$-10N = 74,6\overline{6} \dots$$

$$\hline 90N = 672 \Rightarrow N = \frac{672}{90}$$

$$9,4\overline{5} \Rightarrow 100N = 945,4\overline{5} \dots$$

$$-N = 9,4\overline{5} \dots$$

$$\hline 99N = 936 \Rightarrow N = \frac{936}{99}$$

$$3,28 + 7,4\overline{6} - 9,4\overline{5} = \frac{328}{100} + \frac{672}{90} - \frac{936}{99} = \frac{1066}{825}$$