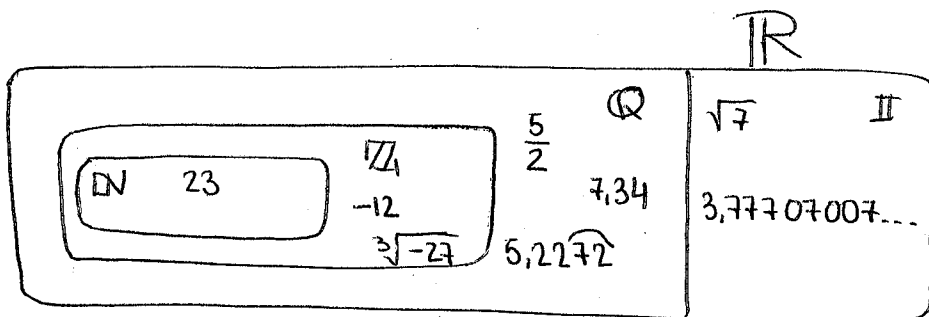


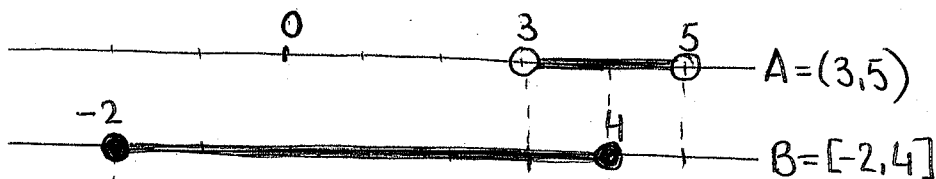
PREGUNTA 1:

- a) (0,5)
- b) (0,5)

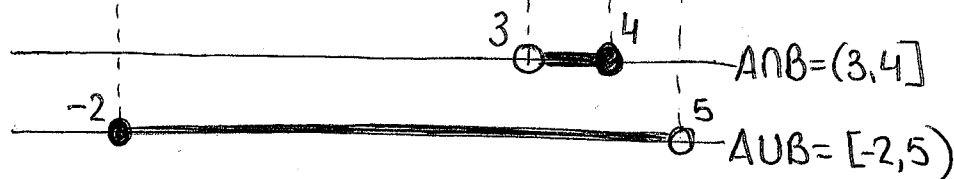


PREGUNTA 2:

- (0,5) a)



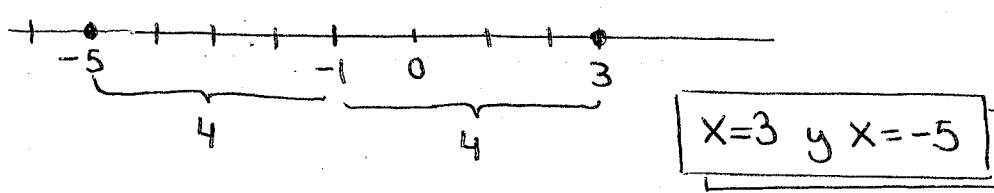
- (0,5) b)



PREGUNTA 3:

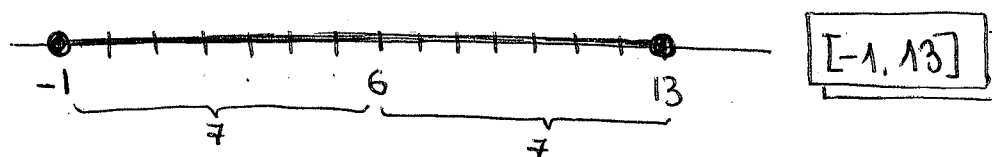
a) $|x+1|=4 \Rightarrow |x-(-1)|=4 \Rightarrow d(x, -1)=4$

- (0,5)



- (0,5)

b) $|x-6| \leq 7 \Rightarrow d(x, 6) \leq 7$



PREGUNTA 4:

a)
$$\frac{1}{15} \cdot \sqrt[9]{\left(\frac{5^5}{3^2}\right)^3 \cdot \left(\frac{5^2}{3^5}\right)^{-3}} = \frac{1}{15} \sqrt[9]{\frac{5^{15} \cdot 5^{-6}}{3^6 \cdot 3^{-15}}} = \frac{1}{15} \sqrt[9]{\frac{5^9}{3^{-9}}} = \frac{1}{15} \sqrt[9]{5^9 \cdot 3^9} =$$

$$= \frac{1}{15} 5 \cdot 3 = 1$$

$$(0,75) \quad b) \frac{\sqrt[6]{18}}{\sqrt[3]{3} \cdot \sqrt[4]{32}} = \sqrt[12]{\frac{(2 \cdot 3^2)^2}{3^4 \cdot (2^5)^3}} = \sqrt[12]{\frac{2^2 \cdot 3^4}{3^4 \cdot 2^{15}}} = \sqrt[12]{\frac{1}{2^{13}}} = \frac{1}{2} \cdot \frac{1}{\sqrt[12]{2}} =$$

$$= \frac{1}{2} \cdot \frac{\sqrt[12]{2^{11}}}{\sqrt[12]{2} \cdot \sqrt[12]{2^{11}}} = \boxed{\frac{1}{4} \sqrt[12]{2^{11}}}$$

$$(0,5) \quad c) \frac{-4^2 \cdot 2^3 \cdot (-15)^2}{3^3 \cdot 2^4 \cdot [(-5)^3]^2} = \frac{-(2^2)^2 \cdot 2^3 \cdot 3^2 \cdot 5^2}{3^3 \cdot 2^4 \cdot 5^6} = -\frac{2^2 \cdot 3^2 \cdot 5^2}{2^4 \cdot 3^3 \cdot 5^6} = \boxed{-\frac{2^3}{3 \cdot 5^4}}$$

$$(0,5) \quad d) 2\sqrt{\frac{3}{4}} - \sqrt{50} - \sqrt{\frac{27}{4}} + \frac{1}{4}\sqrt{12} - 3\sqrt{75} + 16\sqrt{3} + 5\sqrt{2} =$$

$$= 2 \cdot \frac{1}{2} \sqrt{3} - 5\sqrt{2} - \frac{3}{2} \sqrt{3} + \frac{1}{4} \cdot 2 \sqrt{3} - 3 \cdot 5 \sqrt{3} + 16\sqrt{3} + 5\sqrt{2} =$$

$$= \underbrace{(-5+5)}_0 \sqrt{2} + \underbrace{\left(1 - \frac{3}{2} + \frac{1}{2} - 15 + 16\right)}_0 \sqrt{3} = \boxed{\sqrt{3}}$$

$$(0,5) \quad e) \frac{2}{\sqrt[7]{x^6}} = \frac{2 \cdot \sqrt[7]{x}}{\sqrt[7]{x^6} \cdot \sqrt[7]{x}} = \frac{2 \sqrt[7]{x}}{\sqrt[7]{x^7}} = \boxed{\frac{2}{x} \sqrt[7]{x}}$$

$$(0,5) \quad f) \frac{\sqrt{3}+2}{\sqrt{3}-2} = \frac{(\sqrt{3}+2)(\sqrt{3}+2)}{(\sqrt{3}-2)(\sqrt{3}+2)} = \frac{(\sqrt{3}+2)^2}{3-4} = -(\sqrt{3}+2)^2 = \boxed{-7 - 4\sqrt{3}}$$

PREGUNTA 5

$$(0,75) \quad a) \textcircled{a.1} \quad \log_x 25 = -2 \Leftrightarrow x^{-2} = 25 \Rightarrow x^{-2} = 5^2 \Rightarrow x^{-2} = \left(\frac{1}{5}\right)^{-2} \Leftrightarrow \boxed{x = \frac{1}{5}}$$

$$\textcircled{a.2} \quad \log x = -3 \Leftrightarrow 10^{-3} = x \Rightarrow \boxed{x = \frac{1}{1000}} \quad (\text{o } x = 0,001)$$

$$(0,75) \quad b) \textcircled{b.1} \quad \log_{\frac{1}{10}} \sqrt[3]{1000} = \log_{\frac{1}{10}} 10 = \log_{\frac{1}{10}} \left(\frac{1}{10}\right)^{-1} = \boxed{-1}$$

$$\textcircled{b.2} \quad \log_7 \sqrt[5]{\frac{1}{7^3}} = \log_7 \sqrt[5]{7^{-3}} = \log_7 7^{-3/5} = \boxed{-\frac{3}{5}}$$

c) $\log 2 \approx 0,3010$ } Entonces:
 (0,75) $\log 10 = 1$

$$\begin{aligned} \log 0,0625 &= \log \frac{625}{10000} = \log 625 - \log 10000 = \log 5^4 - 4 = \\ &= \log \left(\frac{10}{2}\right)^4 - 4 = \log 10^4 - \log 2^4 - 4 = 4 \cdot \log 10 - 4 \cdot \log 2 - 4 = \\ &= \cancel{4} - 4 \cdot \log 2 - \cancel{4} = -4 \cdot 0,3010 = \boxed{-1,204} \end{aligned}$$

d) $\log A = 2 \log 3 - \frac{1}{2} \log y + \frac{3}{4} \log x \Rightarrow \log A = \log 3^2 - \log \sqrt{y} + \log \sqrt[4]{x^3} \Rightarrow$
 (0,5) $\Rightarrow \log A = \log \frac{9 \sqrt[4]{x^3}}{\sqrt{y}} \Leftrightarrow \boxed{A = \frac{9 \sqrt[4]{x^3}}{\sqrt{y}}}$

PREGUNTA 6:

