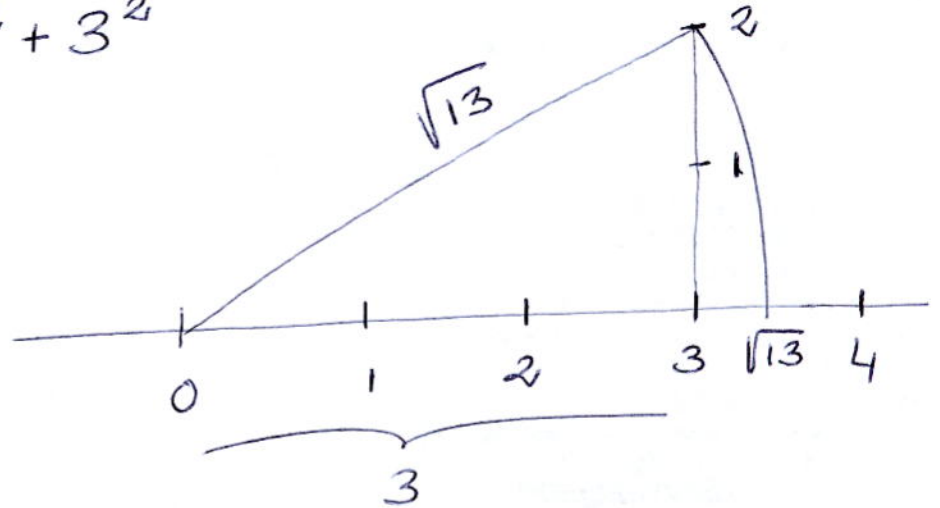
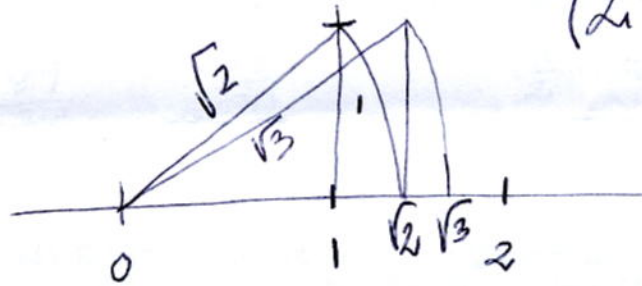


① $\rightarrow \sqrt{13} = \sqrt{2^2 + 3^2}$

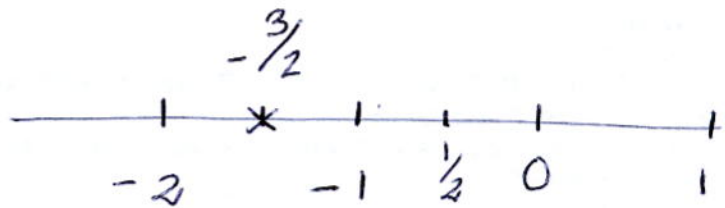


$\rightarrow \sqrt{3} = \sqrt{(\sqrt{2})^2 + 1^2} \Rightarrow \sqrt{2} = \sqrt{1^2 + 1^2}$

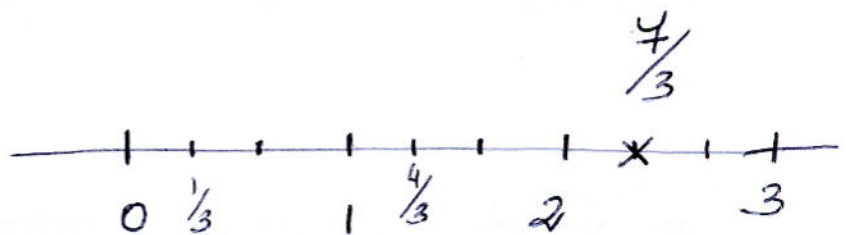
(Libro de texto)



$\rightarrow \frac{-\sqrt{9}}{2} = \frac{-3}{2}$



$\rightarrow \frac{7}{3}$



$$\begin{aligned}
 & \frac{\sqrt[5]{\sqrt{x^4 \cdot y^3}} \cdot \sqrt{x^7 \cdot 2^5 \cdot y^3} \cdot \sqrt[3]{2^4 \cdot y^8}}{\sqrt{y^3 \cdot 2^7} \cdot \sqrt[5]{2^3 \cdot x^7}} \\
 &= \frac{x^{\frac{4}{10}} \cdot y^{\frac{3}{10}} \cdot x^{\frac{7}{2}} \cdot 2^{\frac{5}{2}} \cdot y^{\frac{3}{3}} \cdot 2^{\frac{4}{3}} \cdot y^{\frac{8}{3}}}{y^{\frac{3}{2}} \cdot 2^{\frac{7}{2}} \cdot 2^{\frac{3}{5}} \cdot x^{\frac{7}{5}}} \\
 &= X^{\frac{4}{10} + \frac{7}{2} - \frac{7}{5}} \cdot Y^{\frac{3}{10} + \frac{3}{3} - \frac{3}{2}} \cdot 2^{\frac{5}{2} + \frac{4}{3} - \frac{7}{2} - \frac{3}{5}} \\
 &= X^{\frac{4+35-14}{10}} \cdot Y^{\frac{9+80}{30}} \cdot 2^{\frac{65+40-105-18}{30}} \\
 &= X^{\frac{25}{10}} \cdot Y^{\frac{89}{30}} \cdot 2^{-\frac{18}{30}} = X^{\frac{5}{2}} \cdot Y^{\frac{89}{30}} \cdot 2^{-\frac{3}{5}}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{3} \text{ a) } \frac{3}{-3+\sqrt{2}} &= \frac{3}{-3+\sqrt{2}} \cdot \frac{-3-\sqrt{2}}{-3-\sqrt{2}} = \frac{-9-3\sqrt{2}}{(-3)^2 - (\sqrt{2})^2} \\
 &= \frac{-9-3\sqrt{2}}{9-2} = \frac{-9-3\sqrt{2}}{7}
 \end{aligned}$$

$$\begin{aligned}
 \text{b) } \frac{\sqrt{7}-\sqrt{2}}{\sqrt{2}+\sqrt{7}} &= \frac{\sqrt{7}-\sqrt{2}}{\sqrt{2}+\sqrt{7}} \cdot \frac{\sqrt{2}-\sqrt{7}}{\sqrt{2}-\sqrt{7}} = \frac{\sqrt{14}-\sqrt{49}-\sqrt{4}+\sqrt{14}}{(\sqrt{2})^2 - (\sqrt{7})^2} \\
 &= \frac{2\sqrt{14}-7-2}{2-7} = \frac{2\sqrt{14}-9}{-5}
 \end{aligned}$$

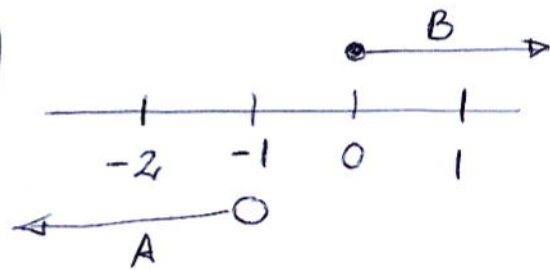
$$c) -\frac{7}{\sqrt[6]{5^7}} = -\frac{7}{\sqrt[6]{5^7}} \cdot \frac{\sqrt[6]{5^5}}{\sqrt[6]{5^5}} = \frac{-7\sqrt[6]{5^5}}{\sqrt[6]{5^{12}}} = \frac{-7\sqrt[6]{5^5}}{5^2} \quad (3)$$

$$(4) 4'\overline{53} + 7'\overline{41} - 3'\overline{45} = \frac{449}{99} + \frac{734}{99} - \frac{311}{90} =$$

$$\left. \begin{aligned} 4'\overline{53} &= \frac{453-4}{99} = \frac{449}{99} \\ 7'\overline{41} &= \frac{741-7}{99} = \frac{734}{99} \\ 3'\overline{45} &= \frac{345-34}{90} = \frac{311}{90} \end{aligned} \right\} = \frac{4490 + 7340 - 3421}{990} = \frac{8409}{990} = \frac{2803}{330} = 8'\overline{493}$$

$$(5) a) A = \{x \in \mathbb{R} \mid x < -1\} \quad (-\infty, -1)$$

$$B = \{x \in \mathbb{R} \mid 0 \leq x\} \quad [0, \infty)$$

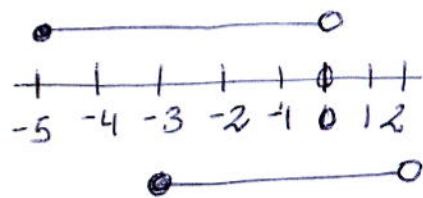


$$A \cup B = (-\infty, -1) \cup [0, \infty)$$

$$A \cap B = \emptyset$$

$$b) A = \{x \in \mathbb{R} \mid -5 \leq x < 0\} \quad [-5, 0)$$

$$B = \{x \in \mathbb{R} \mid -3 \leq x < 2\} \quad [-3, 2)$$



$$A \cup B = [-5, 2)$$

$$A \cap B = [-3, 0)$$