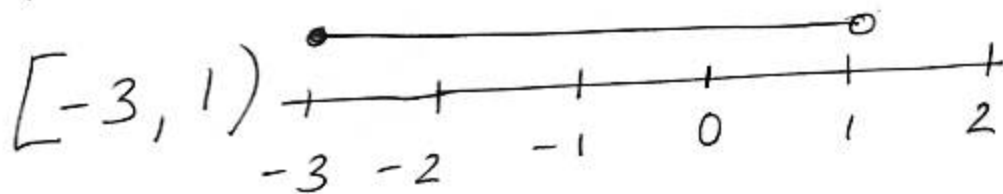
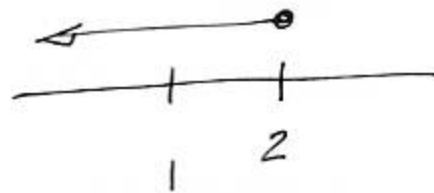


$$\textcircled{1} \text{ a) } A = \{ x \in \mathbb{R} \mid -3 \leq x < 1 \}$$



$$\text{b) } B = (-\infty, 2]$$

$$B = \{ x \in \mathbb{R} \mid x \leq 2 \}$$



$\textcircled{2}$

$$3\overline{7} + 4\overline{6} - 3\overline{75} =$$

$$= \frac{37}{10} + \frac{42}{9} - \frac{372}{99} =$$

$$4\overline{6} = \frac{46-4}{9} = \frac{42}{9} = 4\overline{6}$$

$$3\overline{75} = \frac{375-3}{99} = \frac{372}{99} = 3\overline{75}$$

$$= \frac{3663 + 4620 - 3720}{990} = \frac{4563}{990} = 4\overline{609}$$

$$\begin{aligned}
 \textcircled{3} \quad \frac{\sqrt{X^3 \cdot \sqrt[5]{y^7}}}{\sqrt[3]{X^7} \sqrt{X^3 \cdot y^5}} &= \frac{X^{\frac{3}{2}} \cdot Y^{\frac{7}{10}}}{X^{\frac{7}{3}} X^{\frac{3}{6}} Y^{\frac{5}{6}}} = \\
 &= X^{\frac{3}{2} - \frac{7}{3} - \frac{3}{6}} Y^{\frac{7}{10} - \frac{5}{6}} = X^{\frac{45-70-15}{30}} Y^{\frac{21-25}{30}} \\
 &= X^{-\frac{40}{30}} Y^{-\frac{4}{30}} = X^{-\frac{4}{3}} Y^{-\frac{2}{15}}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{4} \text{ a) } 3 \cdot \sqrt{300} - 5\sqrt{48} + 2\sqrt{50} &= \\
 &= 3 \cdot \sqrt{3 \cdot 2^2 \cdot 5^2} - 5\sqrt{2^4 \cdot 3} + 2\sqrt{5^2 \cdot 2} = \\
 &= 3 \cdot 2 \cdot 5 \sqrt{3} - 5 \cdot 2^2 \cdot \sqrt{3} + 2 \cdot 5 \sqrt{2} = \\
 &= 30\sqrt{3} - 20\sqrt{3} + 10\sqrt{2} = 10\sqrt{3} + 10\sqrt{2} \\
 \text{b) } \sqrt[3]{\sqrt{729}} - \sqrt{9} &= \sqrt[6]{3^6} - \sqrt{3^2} = 3 - 3 = 0
 \end{aligned}$$

$$\begin{aligned}
 \text{c) } 400000 - 30 \cdot 10^4 - 0'005 \cdot 10^8 &= \\
 4 \cdot 10^5 - 2 \cdot 10^5 - 5 \cdot 10^5 &= \underline{\underline{-3 \cdot 10^5}}
 \end{aligned}$$

$$\textcircled{5} \quad \sqrt[5]{537824} = \sqrt[5]{2^8 \cdot 7^5} = 2 \cdot 7 = 14$$

$$\begin{array}{r|l} 537824 & 2 \\ 268912 & 2 \\ 134456 & 2 \\ 67228 & 2 \\ 33614 & 2 \\ 16807 & 7 \\ 2401 & 7 \\ 343 & 7 \\ 49 & 7 \\ 7 & 7 \\ 1 & \end{array}$$

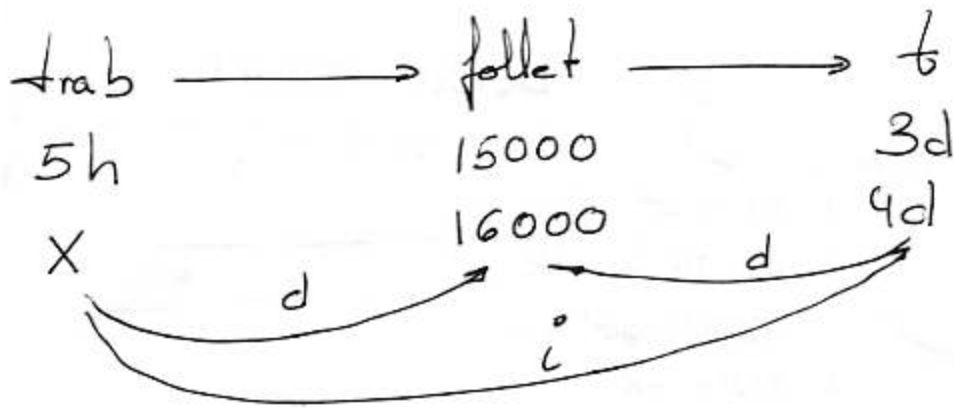
$$\sqrt[6]{15625} = \sqrt[6]{5^6} = 5$$

$$\begin{array}{r|l} 15625 & 5 \\ 3125 & 5 \\ 625 & 5 \\ 125 & 5 \\ 25 & 5 \\ 5 & 5 \\ 1 & \end{array}$$

$$\textcircled{6} \quad (7^{+4})^{-3} = 7^{-12} = \frac{1}{7^{12}}$$

$$\frac{16 \cdot 2^{-3}}{4^3} = \frac{2^4 \cdot 2^{-3}}{(2^2)^2} = \frac{\cancel{2^4} \cdot 2^{-3}}{\cancel{2^4}} = 2^{-3} = \frac{1}{2^3}$$

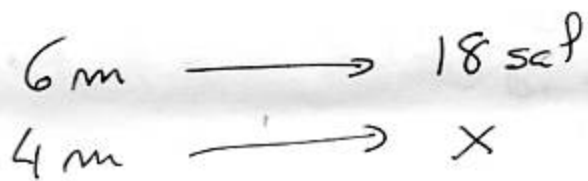
(7)



$$\frac{5 \cdot 3}{X \cdot 4} = \frac{15000}{16000} \Rightarrow X \cdot 4 \cdot 16000 = 15000 \cdot 5 \cdot 3$$

$$X = \frac{15000 \cdot 5 \cdot 3}{4 \cdot 16000} = \underline{\underline{4h}}$$

(8)



$$6 \cdot 18 = 4 \cdot X \quad X = \frac{6 \cdot 18}{4} = \underline{\underline{27 \text{ saltos}}}$$