

$$1. \quad x - \frac{x-1}{x+1} = \frac{3x-1}{2} \Rightarrow \frac{2x(x+1)}{2(x+1)} - \frac{2(x-1)}{2(x+1)} = \frac{(x+1)(3x-1)}{2(x+1)} \Rightarrow$$

$$\Rightarrow 2x(x+1) - 2(x-1) = (x+1)(3x-1)$$

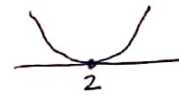
$$\Rightarrow 2x^2 + 2x - 2x + 2 = 3x^2 - x + 3x - 1 \Rightarrow -x^2 - 2x + 3 = 0$$

$$\Rightarrow x^2 + 2x - 3 = 0 \Rightarrow x = \frac{-2 \pm \sqrt{4+12}}{2} = \frac{-2 \pm 4}{2} \begin{matrix} \nearrow 1 \\ \searrow -3 \end{matrix}$$

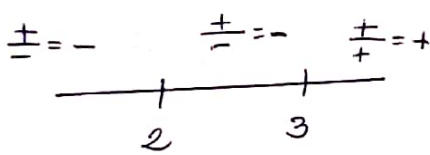
$$2. \quad a) \quad \frac{x^2 - 5x + 7}{x-3} \geq -1 \Rightarrow \frac{x^2 - 5x + 7}{x-3} + 1 \geq 0 \Rightarrow$$

$$\Rightarrow \frac{x^2 - 5x + 7}{x-3} + \frac{x-3}{x-3} \geq 0 \Rightarrow \frac{x^2 - 4x + 4}{x-3} \geq 0$$

$$i) \quad x^2 - 4x + 4 = 0 \Rightarrow \boxed{x = \frac{4 \pm \sqrt{16-16}}{2} = 2}$$



$$ii) \quad x-3=0 \Rightarrow \boxed{x=3}$$



solución: $(3, +\infty) \cup \{2\}$

no incluimos el 3 porque hace que sea cero el denominador.

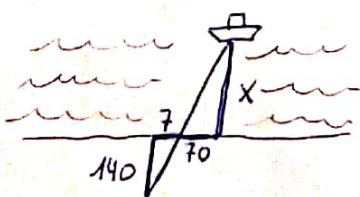
En el punto 2 vale 0, y eso también nos sirve

$$b) \quad |3x-2| + 1 \geq 2 \Rightarrow |3x-2| \geq 1$$

$$\Rightarrow \begin{cases} 3x-2 \geq 1 \Rightarrow 3x \geq 3 \Rightarrow x \geq \frac{3}{3} \Rightarrow x \geq 1 \\ -3x+2 \geq 1 \Rightarrow -3x \geq -1 \Rightarrow 3x \leq 1 \Rightarrow x \leq \frac{1}{3} \end{cases}$$

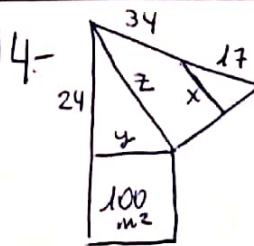
$$\text{solución: } (-\infty, \frac{1}{3}] \cup [1, +\infty)$$

3- si lo dibujo desde arriba:



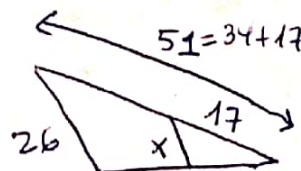
$$\frac{70}{7} = \frac{x}{140} \Rightarrow$$

$$\Rightarrow x = 1400m$$



$$y^2 = 100 \Rightarrow \boxed{y = 10}$$

$$\begin{aligned} 24 \triangle z &\Rightarrow z^2 = 24^2 + 10^2 \\ &\Rightarrow z^2 = 676 \Rightarrow \\ &\Rightarrow \boxed{z = 26} \end{aligned}$$



$$\Rightarrow \frac{x}{26} = \frac{17}{51} \Rightarrow \boxed{x = 86m}$$