

Exercício 46

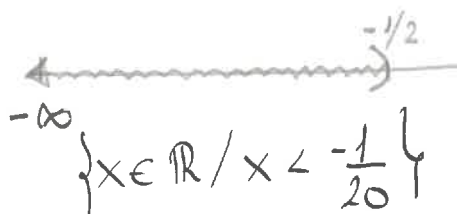
b) $x - 2 \cdot (x+3) > -5 + 19x$

$$x - 2x - 6 > -5 + 19x$$

$$x - 2x - 19x > -5 + 6$$

$$-20x > 1$$

$$x < -\frac{1}{20}$$



A horizontal number line with an arrow pointing left at the end. A point is marked on the line with a bracket pointing to the left, labeled $-\frac{1}{20}$. The region to the left of this point is shaded with a wavy line. Below the line, the set is written as $\{x \in \mathbb{R} / x < -\frac{1}{20}\}$.

$$(-\infty, -\frac{1}{20})$$

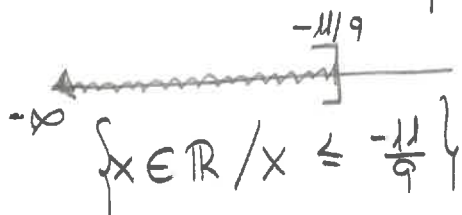
h) $7x+1 \leq 3x-5 \cdot (x+2)$

$$7x+1 \leq 3x-5x-10$$

$$7x-3x+5x \leq -10-1$$

$$9x \leq -11$$

$$x \leq -\frac{11}{9}$$



A horizontal number line with an arrow pointing left at the end. A point is marked on the line with a bracket pointing to the right, labeled $-\frac{11}{9}$. The region to the left of this point is shaded with a wavy line. Below the line, the set is written as $\{x \in \mathbb{R} / x \leq -\frac{11}{9}\}$.

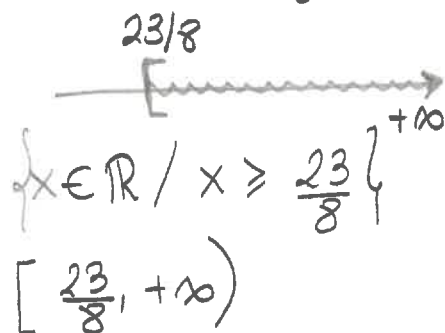
$$(-\infty, -\frac{11}{9}]$$

e) $9+9x-11 \geq x+21$

$$9x-x \geq 21+11-9$$

$$8x \geq 23$$

$$x \geq \frac{23}{8}$$



A horizontal number line with an arrow pointing right at the end. A point is marked on the line with a bracket pointing to the right, labeled $\frac{23}{8}$. The region to the right of this point is shaded with a wavy line. Below the line, the set is written as $\{x \in \mathbb{R} / x \geq \frac{23}{8}\}$ and $[\frac{23}{8}, +\infty)$.

c) $\frac{5x-2}{2} - 3(x-1) \geq \frac{x+6}{10}$

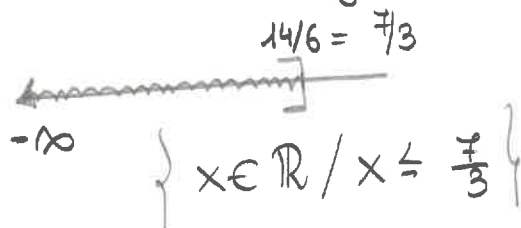
$$\frac{5x-2}{2} - 3x+3 \geq \frac{x+6}{10}$$

$$25x-10-30x+30 \geq x+6$$

$$25x-30x-x \geq 6-30+10$$

$$-6x \geq -14$$

$$x \leq \frac{-14}{-6} \Rightarrow x \leq \frac{14}{6} = \frac{7}{3}$$



A horizontal number line with an arrow pointing left at the end. A point is marked on the line with a bracket pointing to the right, labeled $\frac{14}{6} = \frac{7}{3}$. The region to the left of this point is shaded with a wavy line. Below the line, the set is written as $\{x \in \mathbb{R} / x \leq \frac{7}{3}\}$.

$$(-\infty, \frac{7}{3}]$$

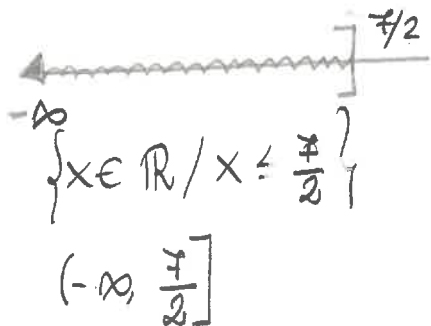
$$d) \frac{3x-1}{2} - \frac{2x+3}{3} \leq \frac{x+5}{6}$$

$$9x-3-4x-6 \leq x+5$$

$$9x-4x-x \leq 5+6+3$$

$$4x \leq 14$$

$$x \leq \frac{14}{4}; x \leq \frac{7}{2}$$



$$g) \frac{x-1}{7} + \frac{x+1}{3} - \frac{3x+5}{2} \geq \frac{2x-7}{6} + x$$

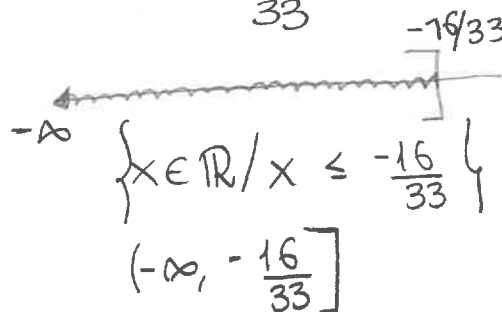
$$6x-6+14x+14-63x-105 \geq 14x-49+42x$$

$$6x+14x-63x-14x-42x \geq -49+105-14+6$$

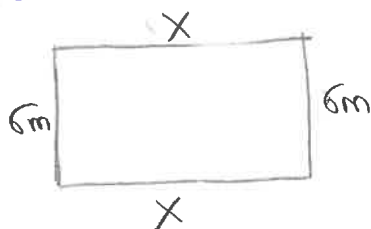
$$-99x \geq 48$$

$$x \leq -\frac{48}{99}$$

$$x \leq -\frac{16}{33}$$



48.



$$2x+12 \leq 30$$

$$2x \leq 18$$

$$x \leq 9$$

Puede medir de largo 9m como máximo

51.

n: números que cumplen condición

$$3n \leq 2n+20$$

$$3n-2n \leq 20$$

$$n \leq 20$$

Todos los números menores o iguales que 20

52.

e: edad de la hija
 e+25: edad de la madre

$$e+25 > 2e+10$$

$$e-2e > 10-25$$

$$-e > -15$$

$$e < 15$$

Se cumplirá siempre que la hija tenga menos de 15 años.