Módulo 9 Cuarto Medio

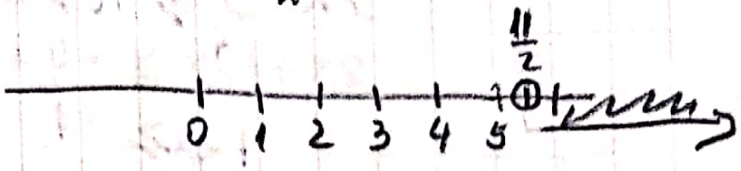
1: $3x+1 < x+12$

$3x-x < 12-1$

$2x < 11 \ /:2$

$x < \frac{11}{2}$

$S:]-\infty, \frac{11}{2}[$



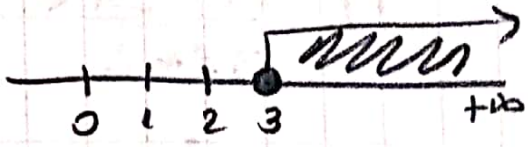
2.- $3x-8+2x+15 \leq 9x-23+2x+12$

$5x-11x \leq -11-7$

$-6x \leq -18 \ /:-6$

$x \geqslant 3$

$S: [3, +\infty[$



3: $5x-\frac{2}{5} \leq 2-\frac{7x}{2}+3 \ /\cdot 10$

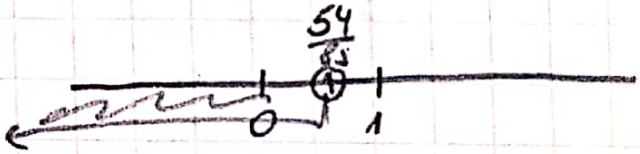
$50x-4 \leq 20-35x+30$

$50x+35x \leq 50+4$

$85x \leq 54$

$x \leq \frac{54}{85}$

$S:]-\infty, \frac{54}{85}[$



4) $2x^2 \geqslant -29x-90$

$2x^2+29x+90 \geqslant 0$

$(2x+9)(2x+10) \geqslant 0$

$2x+9 \geqslant 0 \quad \wedge \quad 2x+10 \geqslant 0$

$x \geqslant -\frac{9}{2} \qquad x \geqslant -5$

$2x^2+29x+90 \cdot \frac{2}{2}$

$\frac{4x^2+2x\cdot 29+180}{2}$

$\frac{(2x+9)(2x+20)}{2}$

$\frac{2(2x+9)(x+10)}{2}$

$S: [-5, +\infty[$

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

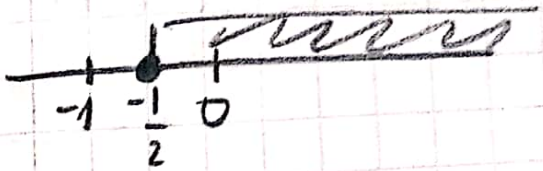
$2x-3 \geq -10x-4$

$2x+10x \geq -4+3$

$12x \geq -1$

$x \geq -\frac{1}{12}$

$S: [-\frac{1}{2}, +\infty[$



7) $\frac{3x^2-2x}{3x+2} \leq -2$

$3x^2-2x \leq -6x-4$

$3x^2+4x+4 \leq 0$

$\nexists$ solución real. es imaginaria

$3x^2+4x+4$

$\frac{-4 \pm \sqrt{4^2-4 \cdot 3 \cdot 4}}{2 \cdot 3}$

$\frac{-4 \pm \sqrt{16-48}}{6}$

$\frac{-4 \pm \sqrt{-32}}{6}$ → Imag.