Section 1.7

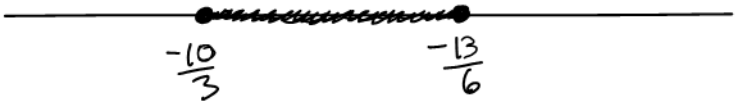
30. $-3 \le 3x+7 \le \frac{1}{2}$

$-7 \quad -7 \quad -7$

$-\frac{10}{3} \le \frac{3x}{3} \le \frac{-\frac{13}{2}}{3}$

$-\frac{10}{3} \le x \le \frac{-13}{6}$

$\left[-\frac{10}{3}, \frac{-13}{6}\right]$



---

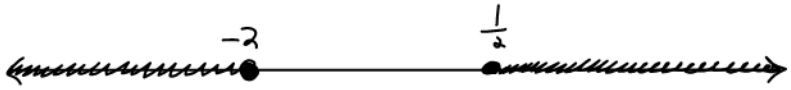
42. $5x^2+3x \ge 3x^2+2$

$2x^2+3x-2 \ge 0$

$(2x-1)(x+2) \ge 0$

$(2x-1)(x+2) = 0$

$x = \frac{1}{2} \quad x = -2$



$x=-3$: $- \cdot - = +$

$x=0$: $- \cdot + = -$

$x=1$: $+ \cdot + = +$

$(-\infty, -2] \cup \left[\frac{1}{2}, +\infty\right)$

---

66. $\frac{x}{2} \ge \frac{5}{x+1} + 4$

$\frac{x}{2} - \frac{5}{x+1} - 4 \ge 0$ least common denominator $2(x+1)$

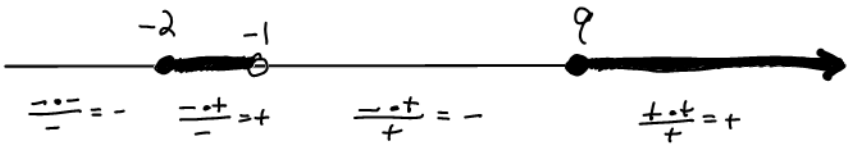
$\frac{x(x+1)}{2(x+1)} - \frac{10}{2(x+1)} - \frac{8(x+1)}{2(x+1)} \ge 0$

$\frac{x(x+1)-10-8(x+1)}{2(x+1)} \ge 0$

$\frac{x^2+x-10-8x-8}{2(x+1)} \ge 0$

$\frac{x^2-7x-18}{2(x+1)} \ge 0$

$\frac{(x-9)(x+2)}{2(x+1)} \ge 0$



$\frac{--}{-} = -$ $\quad \frac{-+}{-} = +$ $\quad \frac{-+}{+} = -$ $\quad \frac{+\cdot+}{+} = +$

$[-2, -1) \cup [9, +\infty)$