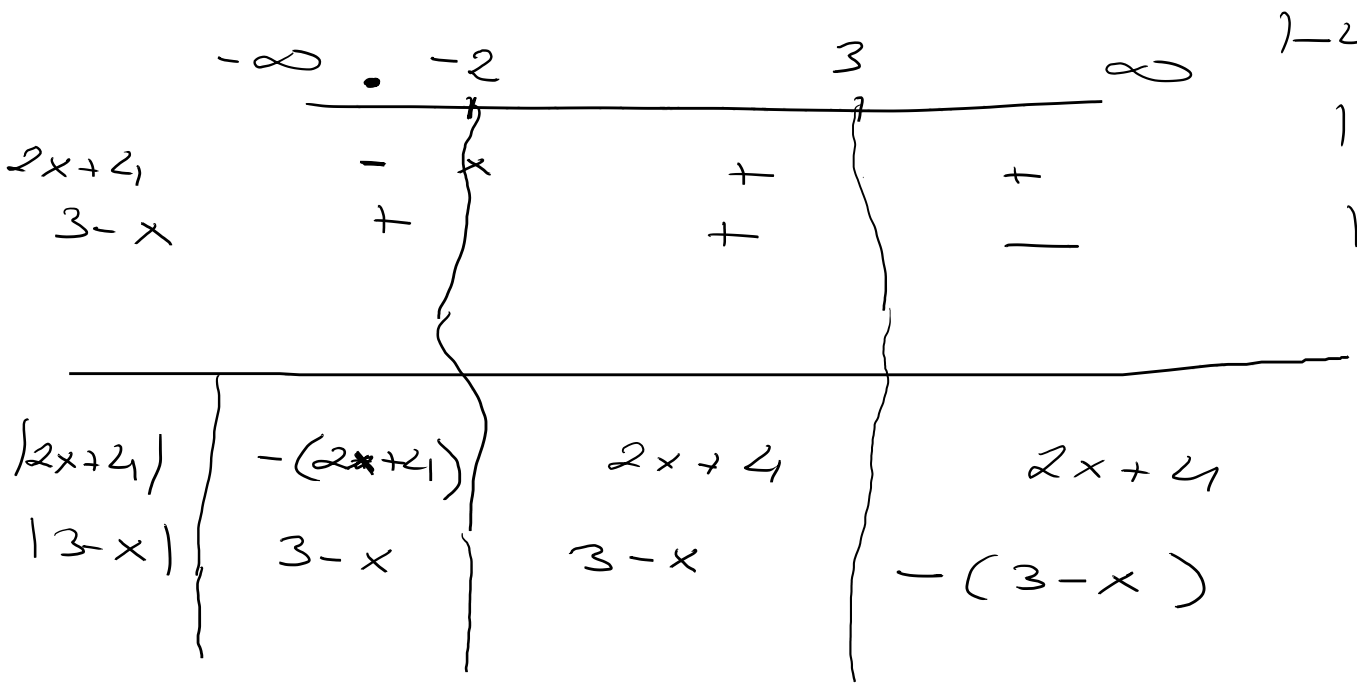
$|2x+4| \leq 6 + |3-x|$ • $2x+4 \leq 6 + 3-x$

(1) $2x+4=0$ $\quad 2x=-4$ $\quad x=-2$
$3-x=0$ $\quad x=3$

• $|4| = 4$
$|+4| = 4$
$|-4| = -(-4) = 4$
$|0| = 0$
$|0| = -0$

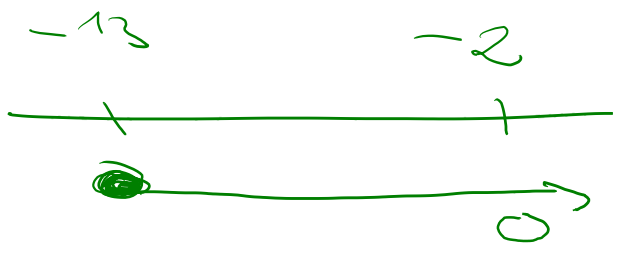


$x \in (-\infty, -2)$

$-(2x+4) \leq 6 + 3-x$

$-2x-4 \leq 9-x$

$-13 \leq x$



$x \in [-13, -2)$

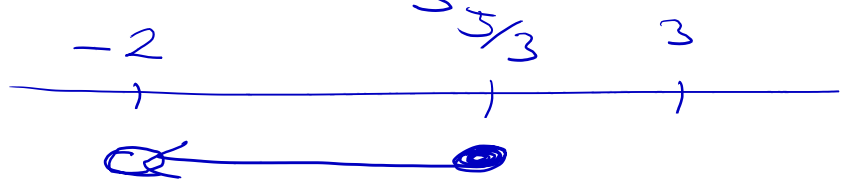
OR

$x \in (-2, 3)$

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

$3x \leq 5$

$x \leq \frac{5}{3}$



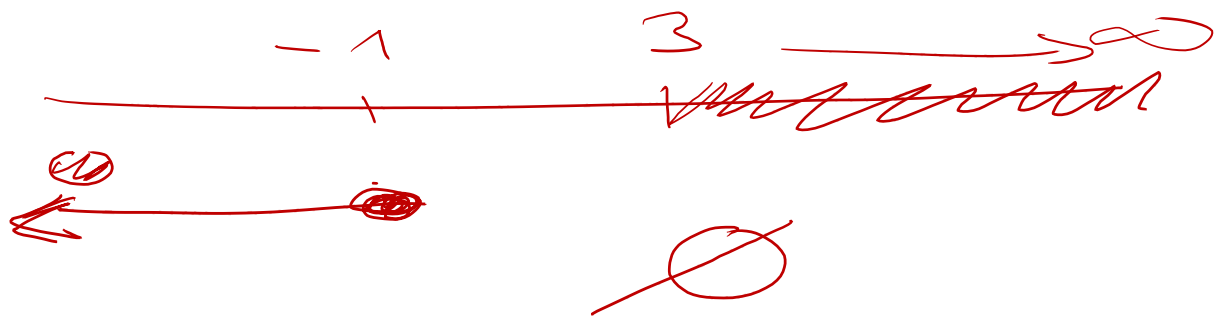
$x \in (-2, \frac{5}{3}]$

$x \in (3, \infty)$

$2x+4 \leq 6 - (3-x)$

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

$x \leq -1$



∅

OR

$x = -2$ $\quad x=-2$ ✓

$|2 \cdot (-2) + 4| \leq 6 + |3-2|$

$0 \leq 6+5$ ✓

$x = 3$

$|2 \cdot 3 + 4| \leq 6 + |3-3|$

$10 \not\leq 6$ $\quad x$

$x \neq 3$ ∴

Conclusion

$x \in [-13, -2) \cup \{3\} \cup (-2, \frac{5}{3}]$

$x \in [-13, \frac{5}{3}]$