

1.11 Linear Inequalities

Recall:

- > greater than
- \geq greater than or equal to
- < less than
- \leq less than or equal to

Recall: Interval notation:

- Use square brackets for values that are include
- Use round brackets for values that are not included
i.e. $\rightarrow (-3, 8]$

e.g.1: Solve algebraically $-2x + 5 < 3$ and draw on the number line

Note: When you multiply or divide by a negative, you must change the direction of the inequality.

e.g 2: Solve $10 \leq 3(2x-5)-(3x-7) \leq 25$ and graph on the number line

This is a **double inequality** and the solution must satisfy

$$10 \leq 3(2x-5)-(3x-7) \quad \text{AND} \quad 3(2x-5)-(3x-7) \leq 25$$

The function defined by must be greater than or equal to 10 and less than or equal to 25