YOU & MATHS Solve the simultaneous inequalities:

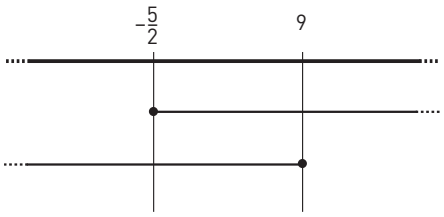
$$\begin{cases} -4x - 2 \leq -2x + 3 \\ \frac{2}{3}x + 9 \geq x + 6 \end{cases}$$

Graph the solution set on a number line.

Let's simplify the two inequalities:

$$\begin{cases} 2x \geq -5 \\ \frac{1}{3}x \leq 3 \end{cases} \rightarrow \begin{cases} x \geq -\frac{5}{2} \\ x \leq 9 \end{cases}$$

The solution can be written as $-\frac{5}{2} \leq x \leq 9$.
The solution to the first inequality is represented by the ray starting at $-\frac{5}{2}$, while the solution to the second one is represented by the ray ending at 9.



The solution to the simultaneous inequalities is the intersection of the two rays.
On the following graph, the intersection is shown in yellow.