1. Consider the following flow chart which shows the steps taken to solve the equation \( |x - 2| = 3 \).

\[
\begin{align*}
|x - 2| &= 3 \\
\text{negative case} &\rightarrow \text{construct two cases} & \text{positive case} \\
\begin{align*}
x - 2 &= -3 \\
solve for x \rightarrow x &= -1 \\
\end{align*}
\]

\[
\begin{align*}
x - 2 &= 3 \\
solve for x \rightarrow x &= 5 \\
\end{align*}
\]

\[
\text{combine answers} \rightarrow |x - 2| = 3 \text{ if } x = -1 \text{ or } 5
\]

Construct similar charts (and find the solutions) for the equations:

- \( |x + 7| = 1 \); and
- \( |x - 3| = 10 \).
2. Solve the following equations and match the solution with the correct interval on the right hand side.

- 8x < 32
- 5(x - 3) ≥ 2(x + 7) + 1
- 8x - 5 > 4x + 7
- -8 < 3x - 2 ≤ 4
- 3(x - 1) ≤ \frac{2x + 10}{2}
- \frac{x + 6}{2} ≤ x
- 2x - 1 ≥ \frac{9x + 1}{4}
- -2 < \frac{2x}{3} < 4
- \frac{3(2x - 1)}{2} > \frac{x - 3}{5} + \frac{x + 18}{10}
- 2(3x - 6) ≤ \frac{5x + 11}{2}