

Look at the following conjunction:

$$2x + 2 < 3x < 4x - 3$$

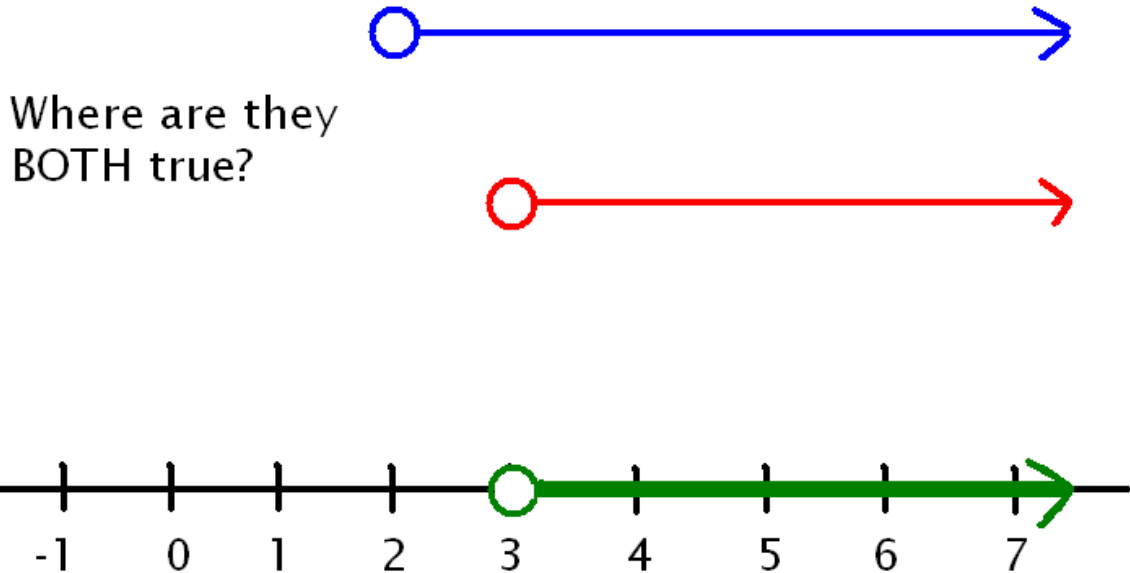
It appears to be a conjunction sANDwich, but the variable x appears in more places than just the middle of the sANDwich.

We will not be able to solve this inequality by doing the same thing to all three parts. Instead, we will...

- 1) Split the conjunction into two inequalities and connect those parts with "AND." Solve the two inequalities separately.

$$\begin{array}{lll} 2x + 2 < 3x & \text{AND} & 3x < 4x - 3 \\ 2 < x & \text{AND} & -x < -3 \\ x > 2 & \text{AND} & x > 3 \end{array}$$

2) Graph the result to see what the final answer should actually be.



3) Determine the actual answer by looking at the graph.

The actual answer is $x > 3$.

4) OPTIONAL – Try some numbers to see if your answer checks out. For this example, try a number larger than 3 (10, for example) – you should get a TRUE statement. Try a number less than 3 (0, for example) – you should get a FALSE statement.