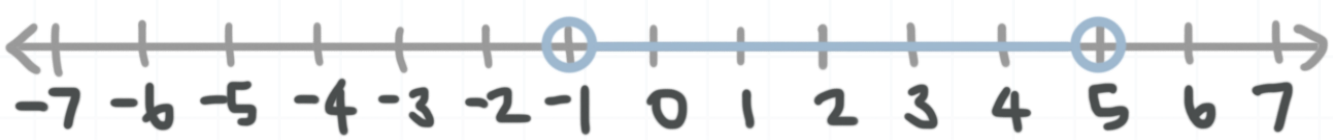
**Topic**: Graphing conjunctions on a number line

**Question**: Graph the conjunction $-1 < x < 5$.

**Answer choices**:

A




B

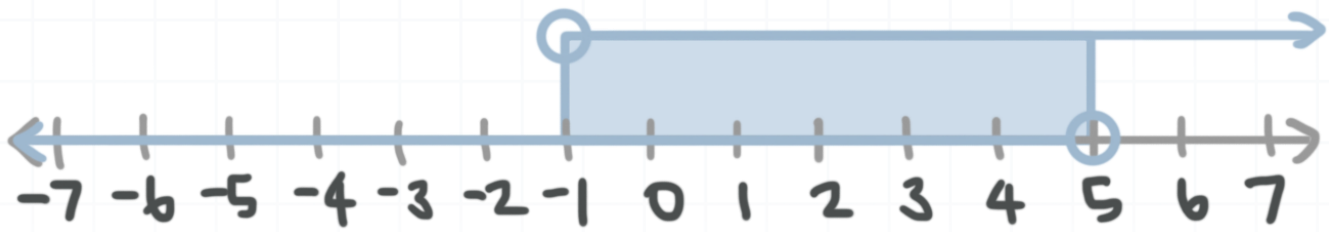

C


D

**Solution**: A

The solution of the conjunction $-1 < x < 5$ consists of all the numbers that are greater than $-1$ and less than $5$.

Remember, $-1 < x$ is equivalent to $x > -1$, so the graph of the conjunction is the overlap of the graphs of the inequalities $x > -1$ and $x < 5$.




The shaded area shows the overlap, which is everything between $-1$ and $5$. The overlap includes neither $-1$ nor $5$, because there's an open circle at $-1$ on the graph of the inequality $x > -1$, and an open circle at $5$ on the graph of the inequality $x < 5$.

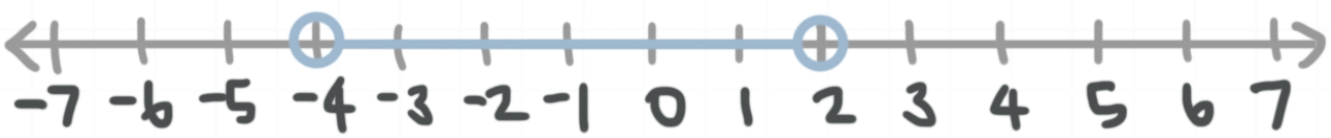
**Topic**: Graphing conjunctions on a number line

**Question**: Graph the conjunction $2 > x \geq -4$.

**Answer choices**:

A


B



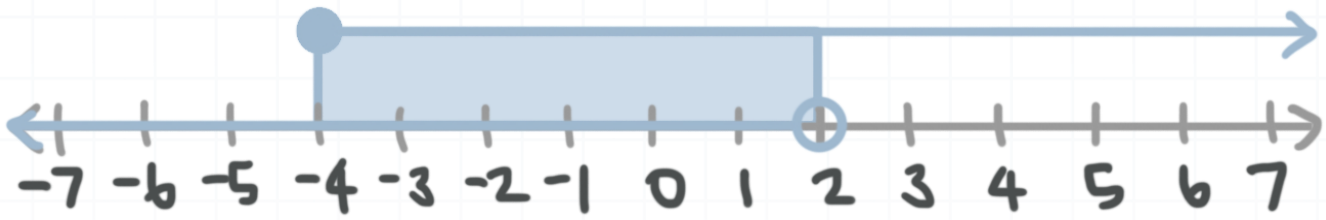

C


D

**Solution**: D

The conjunction $2 > x \geq -4$ can be thought of as the set of all $x$ values that are greater than or equal to $-4$ and less than $2$.

Remember, $2 > x$ is equivalent to $x < 2$, so in terms of graphing, that set would be the intersection (overlap) of $x \geq -4$ and $x < 2$.




The shaded area shows the overlap, which would be from $-4$ to $2$, including $-4$, but not including $2$.

**Topic**: Graphing conjunctions on a number line

**Question**: Graph the conjunction of the inequalities.

$$-6x + 11 > -7$$

$$5x - 6 \geq -26$$

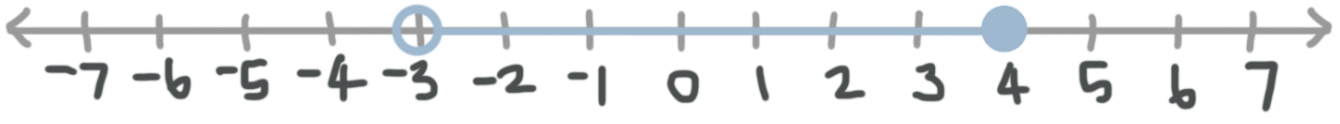
**Answer choices**:

A


B


C


D



**Solution**: B

Before graphing the conjunction of the inequalities $-6x + 11 > -7$ and $5x - 6 \geq -26$, we need to solve the inequalities separately. Begin solving $-6x + 11 > -7$.

$$-6x + 11 > -7$$

$$-6x > -18$$

$$x < 3$$

Solving $5x - 6 \geq -26$.

$$5x - 6 \geq -26$$

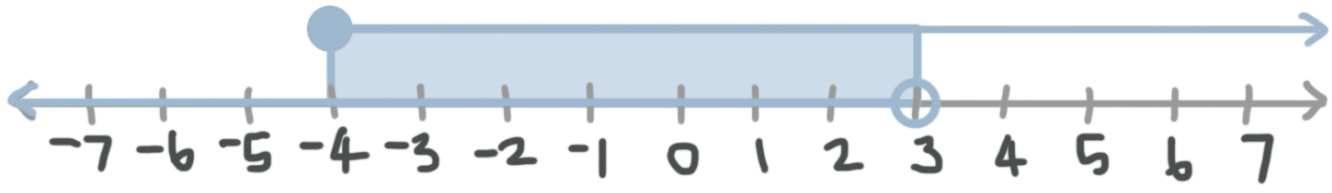
$$5x \geq -20$$

$$x \geq -4$$

Since the inequality $x \geq -4$ is equivalent to $-4 \leq x$, the conjunction of the inequalities $x \geq -4$ and $x < 3$ can be written as

$$-4 \leq x < 3$$

The solution of this conjunction consists of all the numbers that are greater than or equal to $-4$ and less than $3$. The graph of the conjunction is the overlap of the graphs of the inequalities $x < 3$ and $x \geq -4$.



The overlap consists of an open circle at $3$, a solid circle at $-4$, and everything between $-4$ and $3$.