Solve It

IN06-V1 · storyboard · IN06 Solve a linear inequality. Read each picture with its sentences.

Picture 1

Solve $3x - 7 \geq 8 - 2x$.

$5x - 7 \geq 8$ add 2x

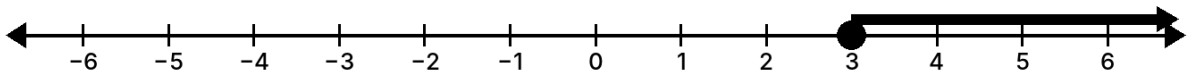
$5x \geq 15$ add 7

$\boxed{x \geq 3}$ divide by 5: keep

1. Solve 3 x minus 7 is greater than or equal to 8 minus 2 x.
2. Add 2 x to both sides: 5 x minus 7 is at least 8.
3. Add 7: 5 x is at least 15.
4. Divide by 5, a positive number, so keep the sign: x is greater than or equal to 3.

Picture 2

$x \geq 3$

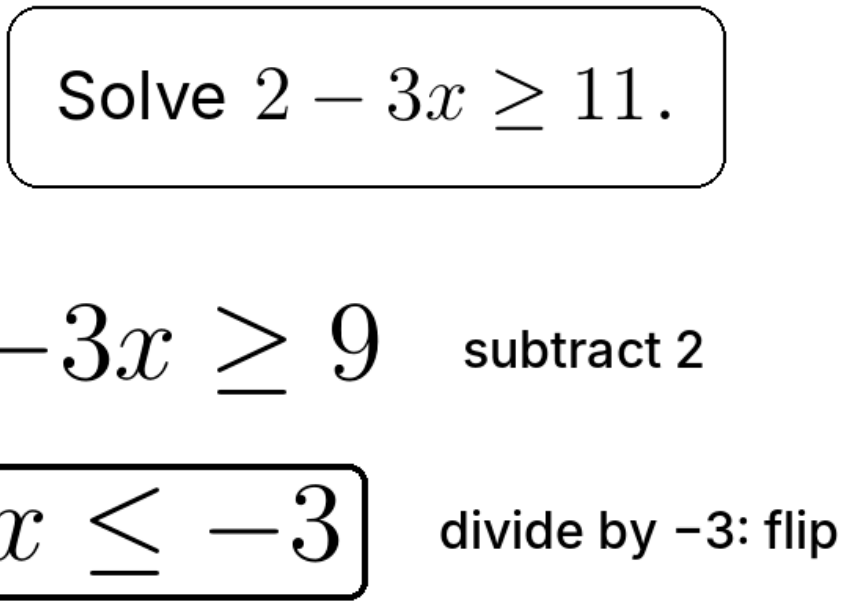


Check: $x = 4$ gives $5 \geq 0$, true.

$x = 0$ gives $-7 \geq 8$, false.

5. On the number line: a closed circle at 3, and shade to the right.
6. Check with a number inside, 4: 5 is at least 0, true.
7. And one outside, 0: negative 7 is at least 8, false.

Picture 3



8. Solve 2 minus 3 x is greater than or equal to 11.
9. Subtract 2 from both sides: negative 3 x is at least 9.
10. Divide by negative 3, and flip the sign: x is less than or equal to negative 3.

Picture 4

Trap $-8t < 8$

✗ $t < -1$

✓ $t > -1$

11. Watch for the trap: don't forget to flip.
12. Negative 8 t is less than 8, and dividing by negative 8 gives t is greater than negative 1.