Solve and Graph Inequalities

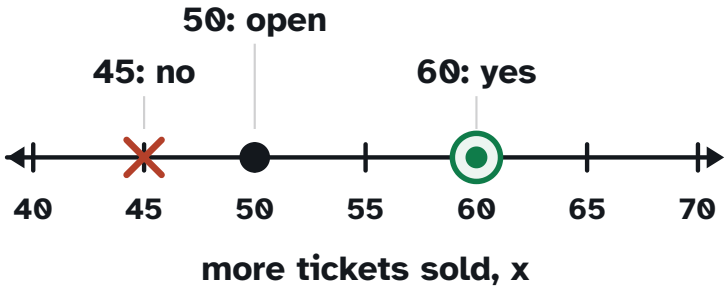
Solve an inequality, then graph its solutions on a number line.

Name _____ **Date** _____

Tonight's spark

A fundraiser concert needs more than 53 tickets sold. Your class has sold 3 so far. If x more are sold, is 50 more tickets enough?

Guess first: is 50 more tickets enough, yes or no?



Our class model: solve first, then graph

Try it

Work it out on paper. Write one answer on each line.

1. **Solve: x + 3 > 7**

   A. x > 10 **B.** x > 4 **C.** x > 3 **D.** x < 4

   My answer _____

2. **Solve: y − 2 ≤ 5**

   A. y ≤ 3 **B.** y ≤ 10 **C.** y ≤ 7 **D.** y ≥ 7

   My answer _____

3. **Solve: 4n ≥ 20**

   A. n ≥ 5 **B.** n ≥ 80 **C.** n ≥ 16 **D.** n ≤ 5

   My answer _____

4 **Solve: m ÷ 3 < 4**

A. m < 1 **B.** m < 7 **C.** m > 12 **D.** m < 12

My answer _____

5 **After solving x + 5 ≥ 9, which graph is correct?**

A. Open circle at 4, shade right **B.** Closed circle at 4, shade right

C. Closed circle at 14, shade right **D.** Closed circle at 4, shade left

My answer _____

6 **A rope must be at least 10 feet long. Anna has 6 feet and needs r more feet, so 6 + r ≥ 10. Solve it.**

A. r ≥ 16 **B.** r ≤ 4 **C.** r ≥ 4 **D.** r ≥ 6

My answer _____

Talk about it

What did you do to both sides? Why does the answer show many numbers, not just one?

Home mission

Stick 3 notes on the fridge as sold tickets. Say: "We need more than 53 tickets in all." How many more must we sell? Write x + 3 > 53, solve it, and test one number that works.

If we get stuck, ask

- What is being added or subtracted? Use the opposite to get x alone.
- Look at the symbol now: does it include the boundary number — open or closed circle?
- Let's substitute a number from the shaded side to check it is true.

Do it on a screen

Scan or type the link. Same lesson, with hints.

eduwonderlab.com/lessons/8-6/homework.html

How did it feel? (optional)

Tricky Getting there Got it