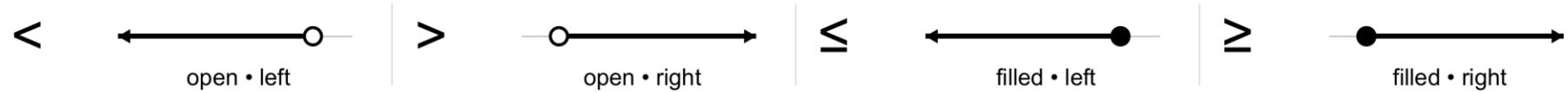
From a linear model to an inequality

Inspect before you think. Think before you write. Write before you answer. Explain how you know.

Graph the SOLVED inequality with the variable on the left.



1 Mai's tank

Mai's fish tank has 16 liters of water in it. She plans to add 4 liters per minute until the tank has at least 36 liters. What are the possible numbers of minutes Mai could add water?

Use t for the number of minutes. Write your answer as an inequality solved for t.

$$y = mt + b$$
$$y = 4t + 16$$

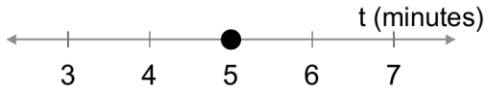
t = time in minutes (input)
y = water in liters (output)

m = 4 liters per minute (slope)
b = 16 liters at time 0 (intercept)

Exactly 36 liters

Find the boundary.

$$4t + 16 = 36$$
$$4t + 16 - 16 = 36 - 16$$
$$4t = 20$$
$$\frac{4t}{4} = \frac{20}{4}$$
$$t = 5$$

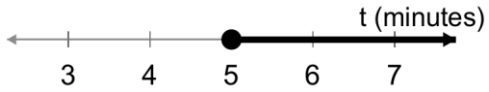


Only 5 minutes.

At least 36 liters

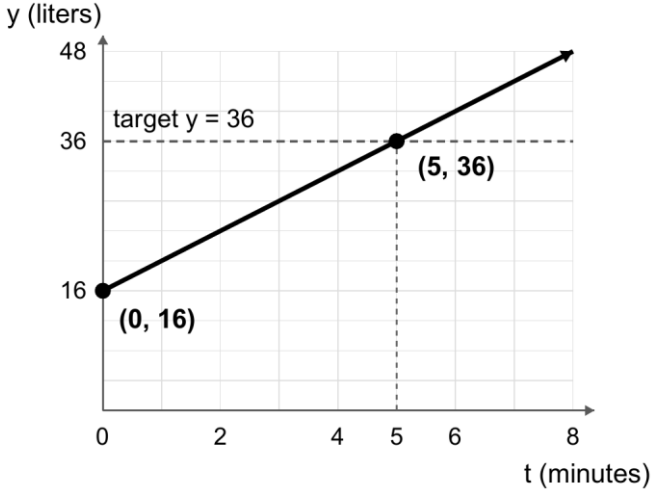
36 liters or more.

$$4t + 16 \geq 36$$
$$4t + 16 - 16 \geq 36 - 16$$
$$4t \geq 20$$
$$\frac{4t}{4} \geq \frac{20}{4}$$
$$t \geq 5$$



5 minutes or more. Include 5.

Read the boundary on the line



At (5, 36), 5 minutes gives 36 liters.
The time boundary is 5 minutes.

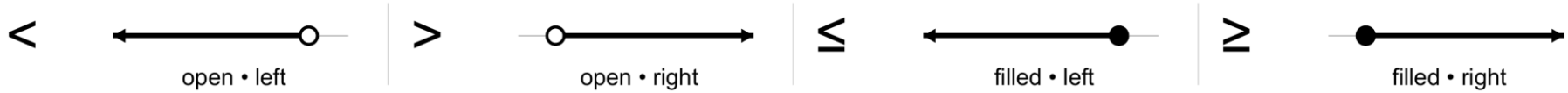
The equation finds the boundary. The solved inequality tells which times work.

TOPIC ID: 24A-C1	TOPIC TITLE: Two-step inequality word problems	
NAME:	BLOCK:	DATE: October 9, 2026

FORESTHILL HIGH SCHOOL

Build and solve the inequality

Graph the SOLVED inequality with the variable on the left.



Write the inequality. Show each operation on BOTH sides. State what the answer means; then graph.

2 Ryan with your teacher

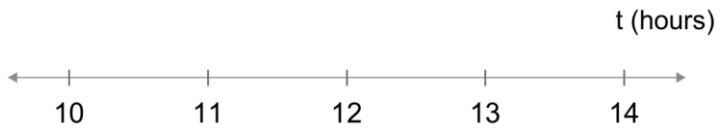
Ryan wants to earn at least $91 trimming trees. He charges $8 per hour and pays $5 in equipment fees. What are the possible numbers of hours Ryan could trim trees?

Use t for the number of hours.
Write your answer as an inequality solved for t.

Build it: (rate × time) − fee ≥ target.

Write and solve the inequality

In words, the possible work times are



3 Ashley on your own

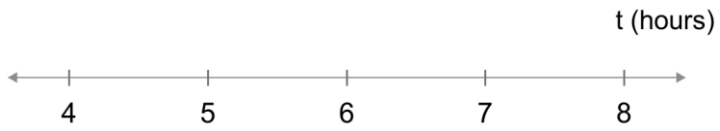
Ashley wants to rent a boat and spend less than $38. The boat costs $7 per hour, and Ashley has a discount coupon for $4 off. What are the possible numbers of hours Ashley could rent the boat?

Use t for the number of hours.
Write your answer as an inequality solved for t.

Build it: the coupon reduces the rental charge.

Write and solve the inequality

In words, the possible rental times are



Time cannot be negative in these situations. Ashley's coupon lowers the charge; it is not a cash payment.

ALEKS: Solving a word problem using a two-step linear inequality

Paper first: problem number → inequality → operations on both sides → solution. Keep your corrections.