Use absolute value to describe limits

Use the Studio in order. Study Problem 1, complete Problem 2 on paper, then turn over.

The center tells where to measure from. The condition tells which distances qualify.

1 Worked example Soup cans

A soup can must contain 7 ounces, plus or minus 0.5 ounce, to pass inspection. Find the acceptable amounts. Let x be the amount in ounces.

(a) Write

$$|x - 7| \leq 0.5$$

Center 7; distance 0.5 or less. Both limits pass.

(b) Solve

$$-0.5 \leq x - 7 \leq 0.5$$

Add 7 to all three parts.

$$-0.5 + 7 \leq x - 7 + 7 \leq 0.5 + 7$$

$$6.5 \leq x \leq 7.5$$

(c) Graph



(d) Interpret

The amount is greater than or equal to 6.5 ounces AND less than or equal to 7.5 ounces.

Boundary check: at 7.5 ounces, the distance is 0.5. Since 0.5 ≤ 0.5, the boundary is included.

2 Your turn Ashley's zipline

Ashley's zipline platform must be 8 yards high, plus or minus 0.5 yard, to pass inspection. Find the unacceptable heights. Let x be the height in yards.

(a) Write

$$|x - 8| ___ 0.5$$

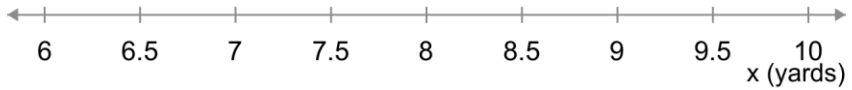
A height fails when it is more than 0.5 yard from 8.

(b) Solve

$$x - 8 < ____ \quad OR \quad x - 8 > ____$$

Add 8 to both sides of each inequality.

(c) Graph



(d) Interpret

Use two comparisons, OR, and yards.

TOPIC ID: 26B-C1	TOPIC TITLE: Absolute value inequalities	
NAME:	BLOCK:	DATE: October 15, 2026

FORESTHILL HIGH SCHOOL

Decide which values meet the condition

Complete both problems before opening their Studio checks. Keep and correct your first attempt.

3 On your own Soup cans

A soup can must contain 7.5 ounces, plus or minus 1 ounce, to pass inspection for distribution. Other cans are sent back. Find the acceptable amounts. Let x be the amount in ounces.

(a) Write

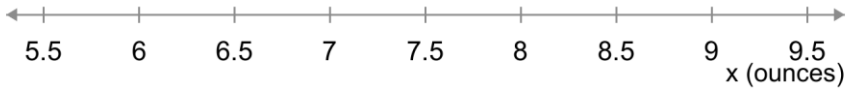
Write an absolute value inequality.

(b) Solve

Show equivalent inequalities and the operations.

(c) Graph

Choose boundary circles and shade all solutions.



(d) Interpret

Use two comparisons, AND or OR, and ounces.

4 On your own Alonzo's zipline

Alonzo's zipline platform must be 7.5 yards high, plus or minus 1 yard, to pass inspection. Other heights fail. Find the unacceptable heights. Let x be the height in yards.

(a) Write

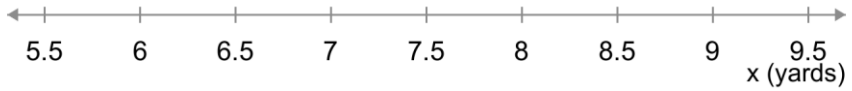
Write an absolute value inequality.

(b) Solve

Show equivalent inequalities and the operations.

(c) Graph

Choose boundary circles and shade all solutions.



(d) Interpret

Use two comparisons, AND or OR, and yards.

Then practice in ALEKS

Open the released Topic 26. On blank paper, record a short problem identifier, then write, solve, graph, and interpret before entering answers. Scroll through every part. Use feedback to correct your paper; read the whole explanation when needed.

Topic 26 Writing and solving an absolute value inequality that models a real-world situation and interpreting the solution