Learning Target: I can solve and graph compound inequalities

Example 1
Write each sentence as an inequality. Graph each inequality.

a. A number \( x \) is greater than \(-8\) and less than or equal to \(4\).

b. A number \( y \) is at most \(0\) or at least \(2\).

Example 2
Solve each inequality. Graph each solution.

a. \(-4 < x - 2 < 3\)

b. \(-3 < -2x + 1 \leq 9\)

Example 3
Solve the inequality. Graph the solution.

3. \(5 \leq m + 4 < 10\)

4. \(-3 < 2k - 5 < 7\)

5. \(4c + 3 \leq -5\) or \(c - 8 > -1\)

6. \(2p + 1 < -7\) or \(3 - 2p \leq -1\)
Electrical devices should operate effectively within a specified temperature range. Outside the operating temperature range, the device may fail.

**a.** Write and solve a compound inequality that represents the possible operating temperatures (in degrees Fahrenheit) of the smartphone.

**b.** Describe one situation in which the surrounding temperature could be below the operating range and one in which it could be above.

7. Write and solve a compound inequality that represents the temperature rating (in degrees Fahrenheit) of the winter boots.

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**Exit Ticket:** Solve and graph.

**a.** \(-1 \leq 2x + 3 \leq 7\)

**b.** \(4x + 1 \leq -11 \text{ or } 3x - 4 \geq 5\)

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**Closure**