Name: _____

Write and Solve an Inequality

Study the example problem showing how to write and solve an inequality for a real-world problem. Then solve problems 1–9.
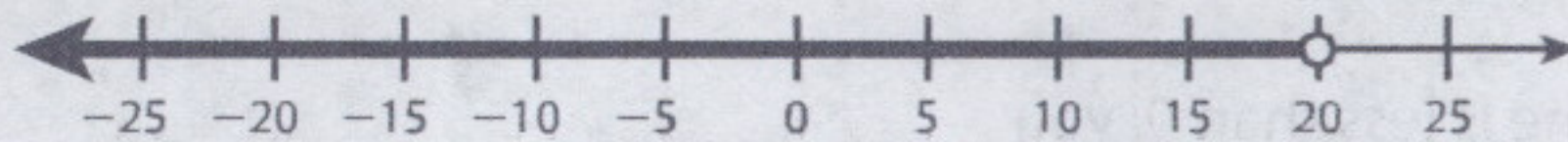
Example

Mr. Gomez gets a notice from the bank when the amount in his checking account drops below $20. For what amounts will Mr. Gomez receive a notice from the bank?

Use words and symbols to represent the situation. Let x represent the amount in Mr. Gomez's account. When x is less than $20, the bank will send a notice.

$x < 20$

Graph the inequality to show all of the solutions. Use an open circle shows that 20 is NOT a solution.

1 Why is the graph in the example shaded to the left?

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2 Is −$10 a solution? Substitute −10 into the inequality in the example to check.

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3 Name an amount that is NOT a solution to the inequality. Explain how you know.

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4 Suppose the bank sent Mr. Gomez a notice whenever the amount in his account dropped to $15 or less. How would the graph in the example change?
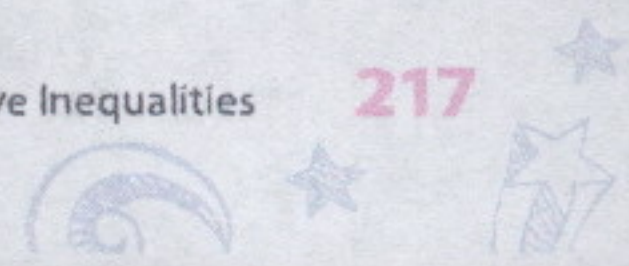
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Vocabulary

inequality a statement that contains the symbol $<, >, \leq,$ or $\geq$. For any inequality, there are many possible solutions. These are inequalities.
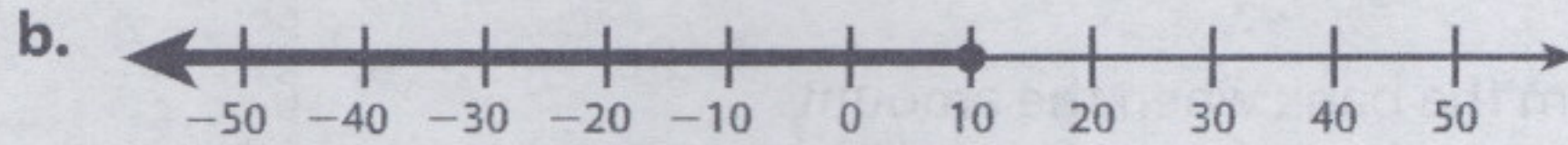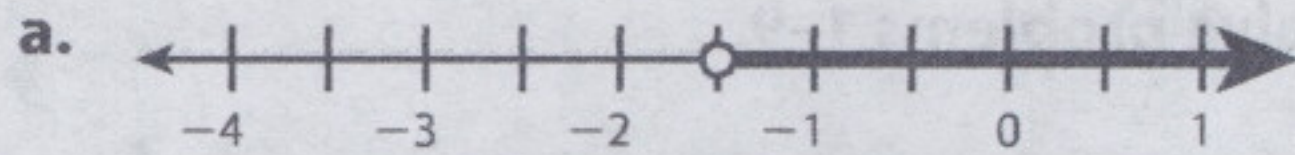
$$x < 5$$
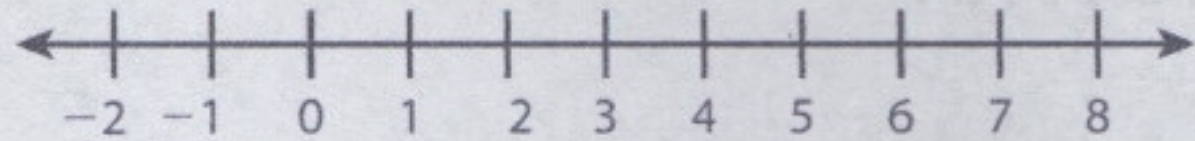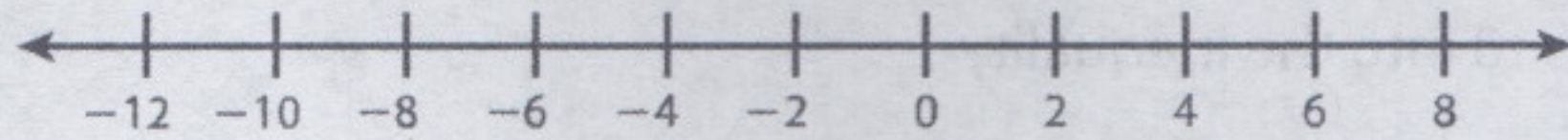$$x > -2$$
$$x \leq 15$$
$$x \geq 0$$

Solve.

5 Write the inequality shown on each graph.

a.

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<-+--+--+--+--+--o--+--+--+--+--+->
 -4    -3    -2    -1     0     1
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b.

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<--+--+--+--+--+--+--•--+--+--+-->
 -50 -40 -30 -20 -10  0  10 20 30 40 50
```

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6 The children at Lincoln School go outside for
recess if the temperature is 3°C or higher. For
what temperatures will the students go
outside? Write an inequality to represent this
situation. Then graph the solution.

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<-+--+--+--+--+--+--+--+--+--+--+->
 -2 -1  0  1  2  3  4  5  6  7  8
```

7 If your score on a computer game is less than 0, you
lose your next turn. For what scores will you lose your
turn? Write an inequality to represent this situation.
Then graph the solution.

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```
<-+---+---+---+---+---+---+---+--->
 -12 -10  -8  -6  -4  -2   0   2   4   6   8
```

8 Write a real-world situation for this inequality: $x \geq 9$ _____

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9 Explain how an equation and an inequality are
different. Give an example of each.

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