

# Introduction to Inequalities

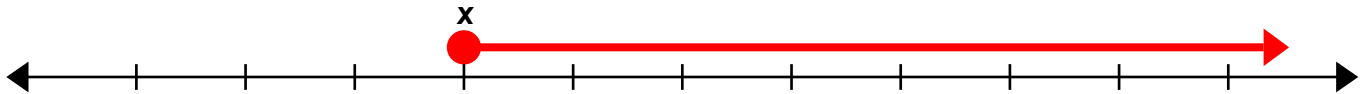
An inequality is a pair of expressions or numbers that are not equal.

You can use these signs to express an inequality:

$>$	<i>greater than</i>	$\geq$	<i>greater than or equal to</i>
$<$	<i>less than</i>	$\leq$	<i>less than or equal to</i>

When you solve an inequality, you need to show all of the values that make the statement true. One way to do this is by graphing the inequality on a number line.

**examples:**  $x \geq 2 + 6$  (x is greater than or equal to 2 + 6)

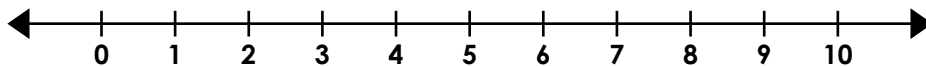


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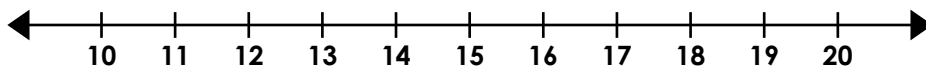
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Write each inequality in words, then graph each on the number line using a red colored pencil or crayon.

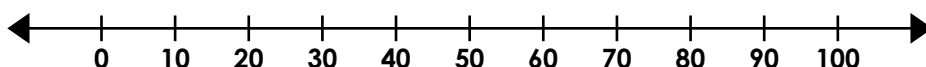
1.  $k \leq 17 - 8$  word form: \_\_\_\_\_



2.  $14 + 4 > q$  word form: \_\_\_\_\_

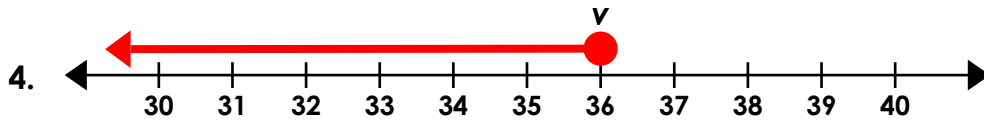


3.  $b \geq 20 + 0$  word form: \_\_\_\_\_

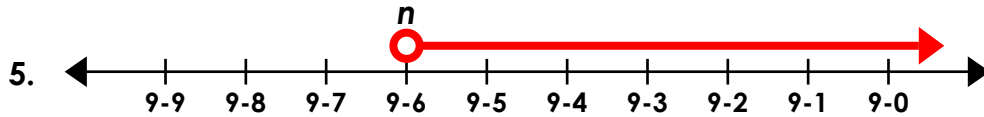


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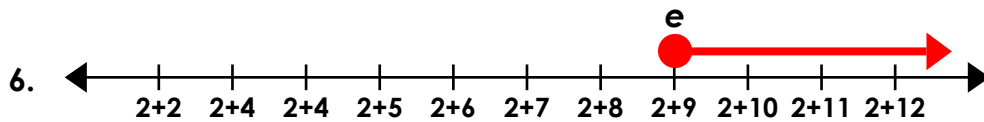
Write the inequality shown by each number line.



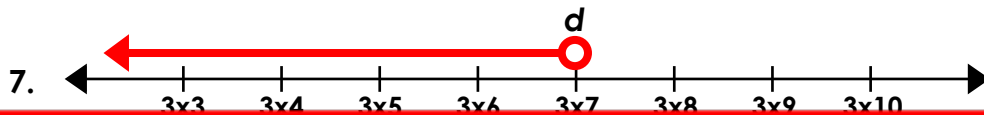
answer: \_\_\_\_\_



answer: \_\_\_\_\_



answer: \_\_\_\_\_



answer: \_\_\_\_\_



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10. For the inequality  $r \geq 3 \times 4$ , Patel says 12 and 16 are both solutions. Is she correct? Explain why or why not.

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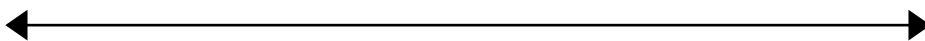
11. For the inequality  $o \leq 6 + 8$ , Porter says 8 and 14 are both solutions. Is he correct? Explain why or why not.

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12. Anh walks her dog at least 4 times each weekday plus twice more each Saturday. Show the inequality of Anh's Saturday dog walks on a number line.



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**examples:**  $x \geq 2 + 6$  (x is greater than or equal to 2 + 6)  
x

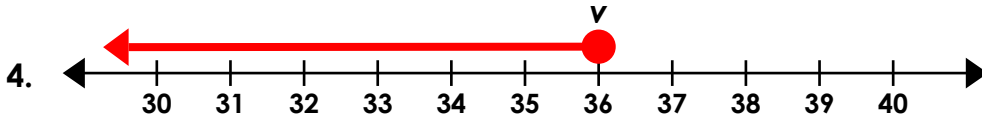


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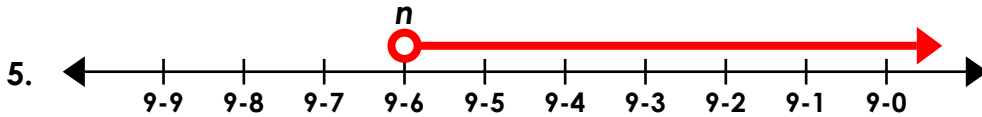
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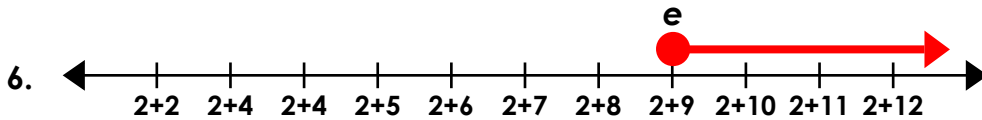
Write the inequality shown by each number line.



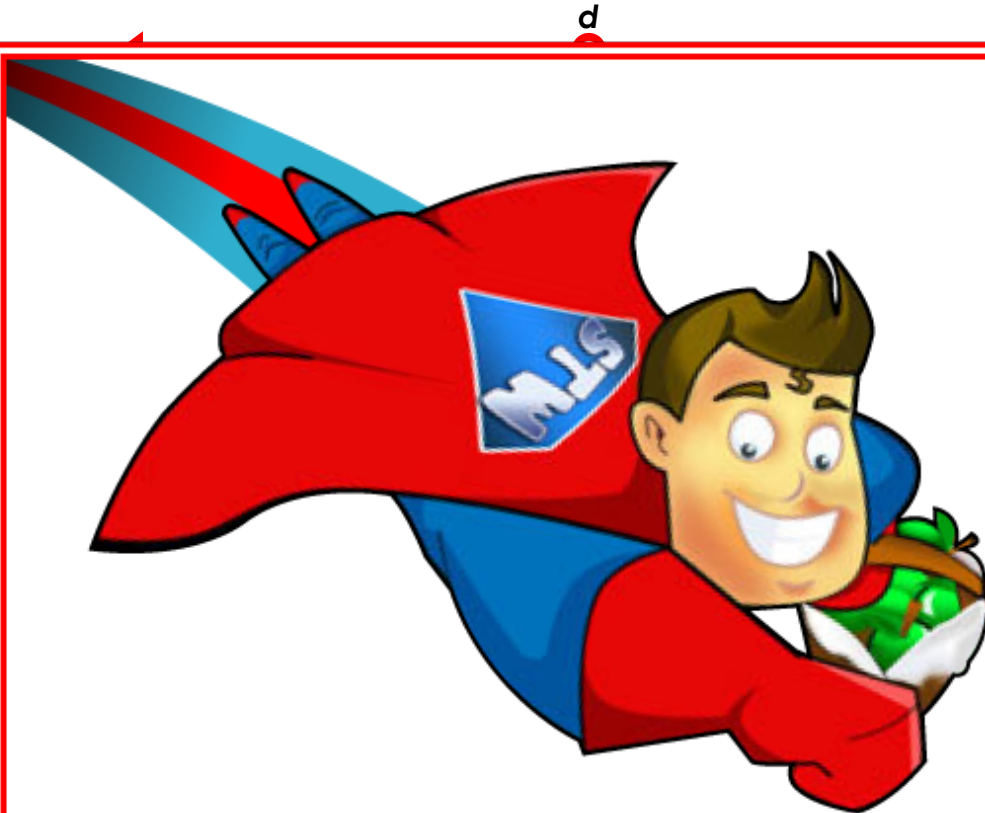
answer:  $v \leq 36$  or  $36 \geq v$



answer:  $n > 9-6$  or  $9-6 < n$



answer:  $e \geq 2+9$  or  $2+9 \leq e$



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