

Graphing Inequalities

Inequalities can be graphed on a number line to illustrate all of the possible solutions.

1st draw a number line and include the number in your inequality.

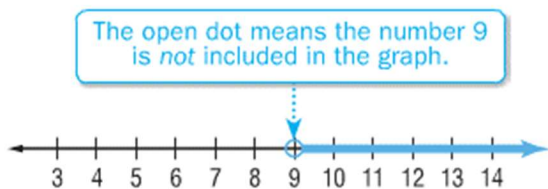
2nd draw an open or closed dot on the number (depending on which inequality symbol is in the inequality. Use an open dot (o) if the inequality has the greater than (>) or less than (<) symbol. Use a solid dot (•) if the inequality has the greater than or equal to (≥) or less than or equal to (≤) symbol.

3rd draw a line and an arrow that shows all of the possible solutions.

Examples:

$n > 9$

Place an open dot at 9. Then draw a line and an arrow to the right.

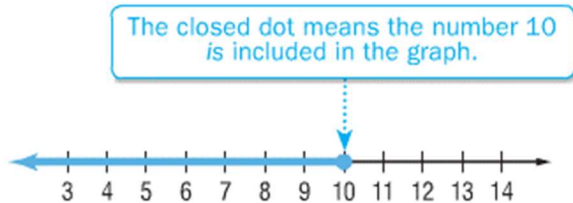


The values that lie on the line make the sentence true. All numbers greater than 9 make the sentence true.

equal to means included

$n \leq 10$

Place a closed dot at 10. Then draw a line and an arrow to the left.



All numbers 10 and less make the sentence true.

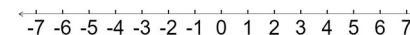
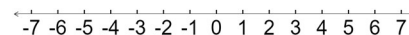
TIP: If you keep the variable on the LEFT, the arrow at the end of your number line looks just like your inequality symbol.

You Try:

Graph the following inequalities on a number line. Then write a word phrase to describe each inequality.

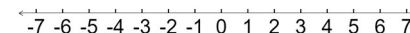
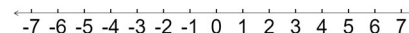
1) $n \leq -5$

2) $n \leq 5$



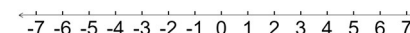
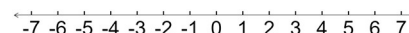
3) $n < 1$

4) $r > 2$



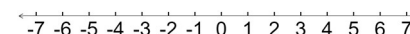
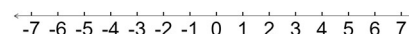
5) $n > 5$

6) $n \leq -2$



7) $n \geq -7$

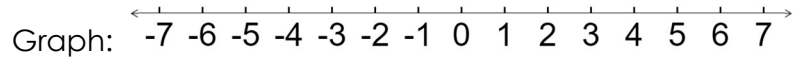
8) $n < 0$



Write the inequality AND graph for each problem below in 7 - 10

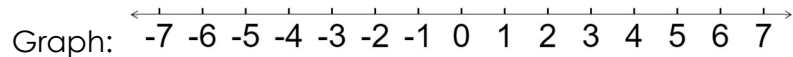
7) Fetty Wap has **at least 3 fans** in Mrs. Ledesma's 3rd period math class.

Inequality: _____



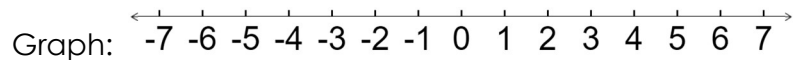
8) Mr. Shaw should send Mrs. Shaw **more than 6 roses per day**.

Inequality: _____



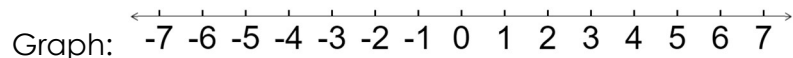
9) Shawn snuck into a G Rated movie because he thought you had to be **at most 10 years old**.

Inequality: _____



10) When trick or treating, Daniella's dream came true. A lady told her she could take **no less than 5 pieces of candy**.

Inequality: _____



More Practice with Inequalities

Write an inequality for each situation, and graph on a number line.

1) Students must score at least 800 to pass the CRCT.



2) You must be shorter than 48" to ride the kiddie train.



3) You should brush your teeth at least twice a day.



4) A good credit score is higher than 699.



5) Classes can have no more than 34 students.



6) AJ needs to save more than \$500.



7) A book costs less than \$20

