**Do Now:** Replace each ? with a > or <

1.) 2 + 3 ___?___ 4

5 > 4

2.) 17 ___?___ 23 - 5

17 < 18

3.) 1/2 ___?___ 1/4

>

4.) -18 ___?___ -19

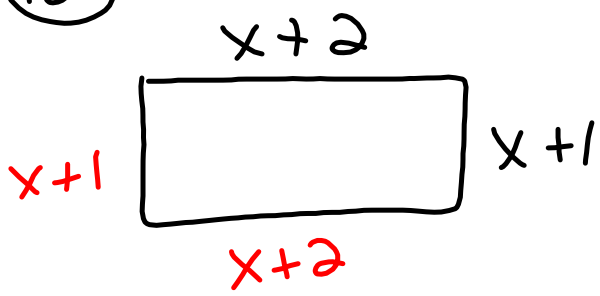
>

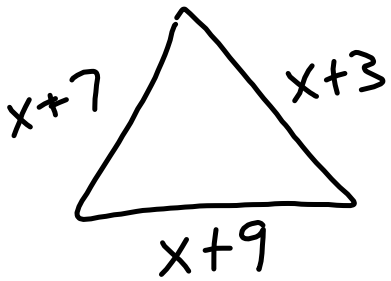
≥ ≤

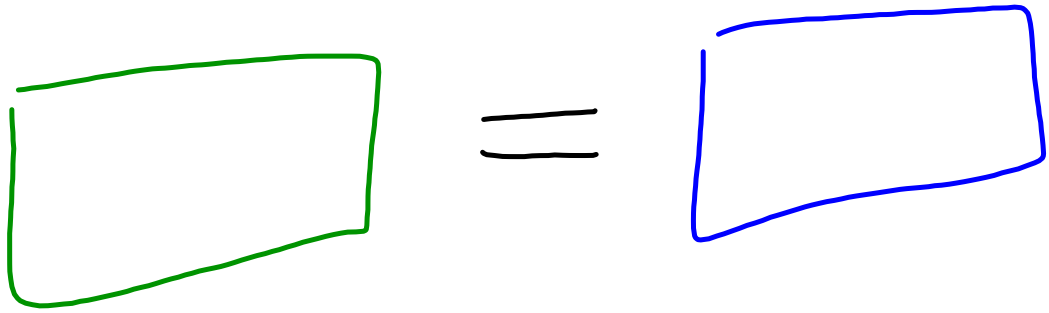
> greater than

< less than

16



**Do Now:** Match the symbol with the word.

| | | |
|---|---|---|
| ____1.) | less than | a. ≥ |
| ____2.) | less than or equal to | b. < |
| ____3.) | greater than | c. ≤ |
| ____4.) | greater than or equal to | d. > |

# 3.4 Solving Inequalities Using Addition or Subtraction

7.NS.1
7.NS.2
7.EE

- SWBAT solve inequalities using addition or subtraction.
- SWBAT understand numbers; understand ways of representing numbers; compute fluently.

- Calculators: No

**inequality-** a statement formed by placing an inequality symbol ( <, >, ≤, ≥ ) between two expressions

**solution of an inequality-** the set of numbers that you can substitute for the variable to make the inequality true

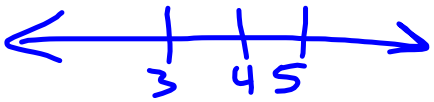
< less than

> greater than

≤ less than or equal to

≥ greater than or equal to

## Graphing Inequalities




Use a number line to graph inequalities

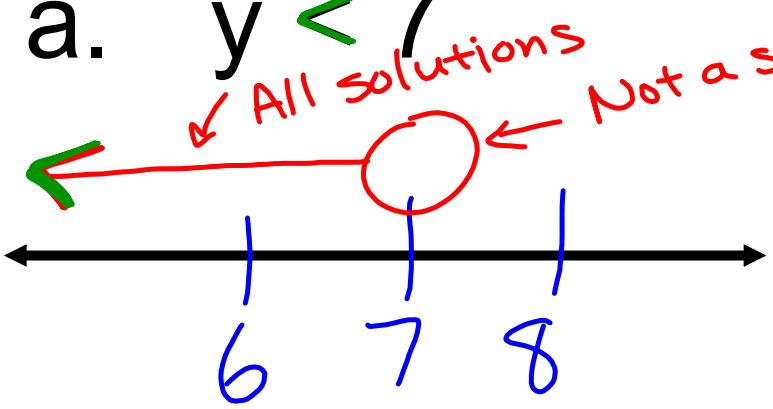

-use an open circle to graph less than ( < ) or greater than ( > )

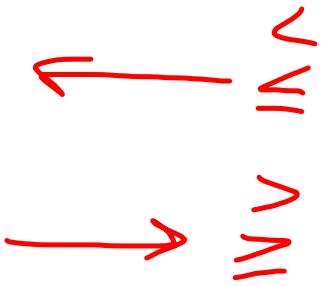
-use a closed circle to graph less than or equal to ( $\leq$ ) or greater than or equal to ( $\geq$ )

-keep the variable on the left side of the inequality symbol

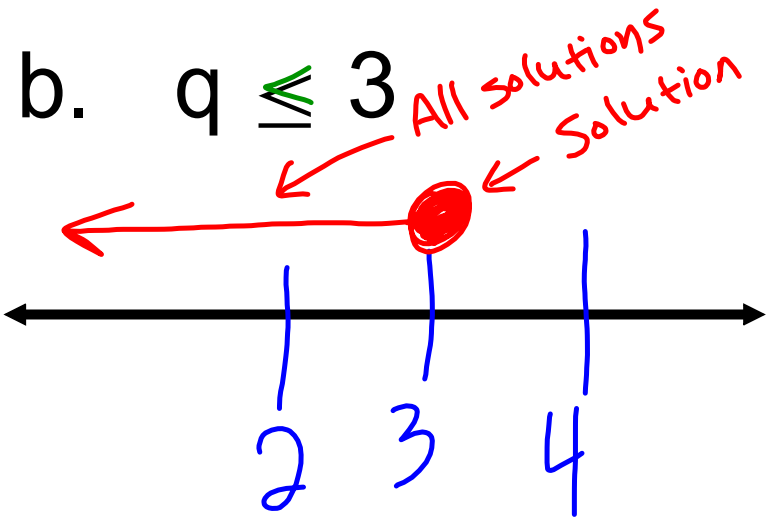
## Graphing Inequalities

a. $y < 7$



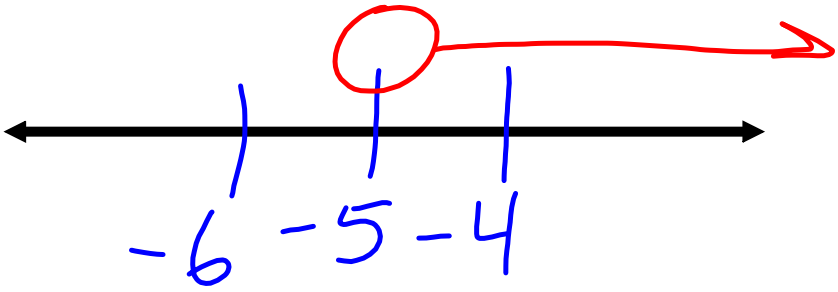

b. $q \leq 3$



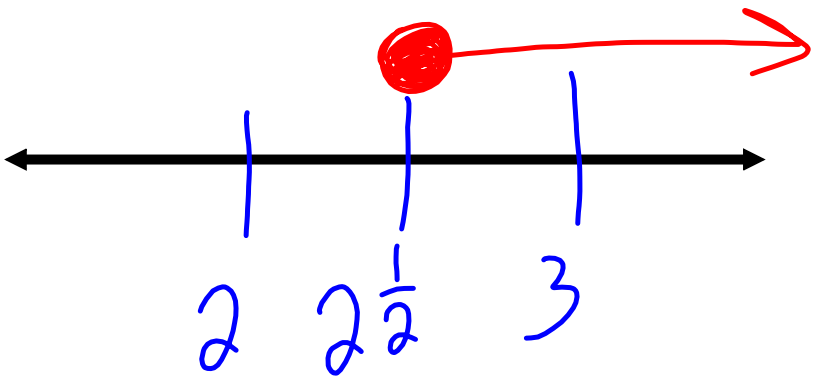
c. $-5 < k$ Switch Variable to left side

Flip

$k > -5$




d. $h \geq 2\ 1/2$



## Graphing Inequalities

a. $z \geq 1$

b. $4 < p$

c. $k \leq -3.5$

d. $1/2 < m$

The freezing point of water is $0^{\circ}$C. At temperatures at or belowfreezing, water is a solid (ice). Write an inequality that gives the temperature at which water is a solid. Then graph.

A cybercafe charges users a minimum fee of $2 for internet access. Write an inequality to represent the access fee, f, then graph.

# Adding or Subtracting Inequalities

If $a > b$, then $a + c > b + c$

If $a > b$, then $a - c > b - c$

If $a < b$, then $a + c < b + c$

If $a < b$, then $a - c < b - c$

Solve the inequality. Then graph its solution.

1. $m + 5 \geq 10$

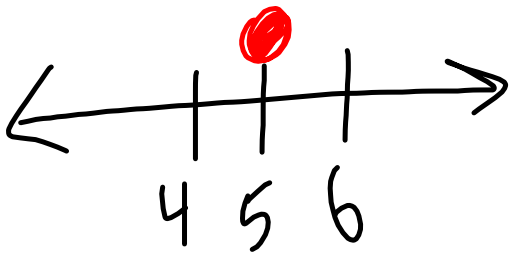
$-5 \quad -5$

$m \geq 5$

$m + 5 \geq 10$

$-5 \quad -5$

$m \geq 5$

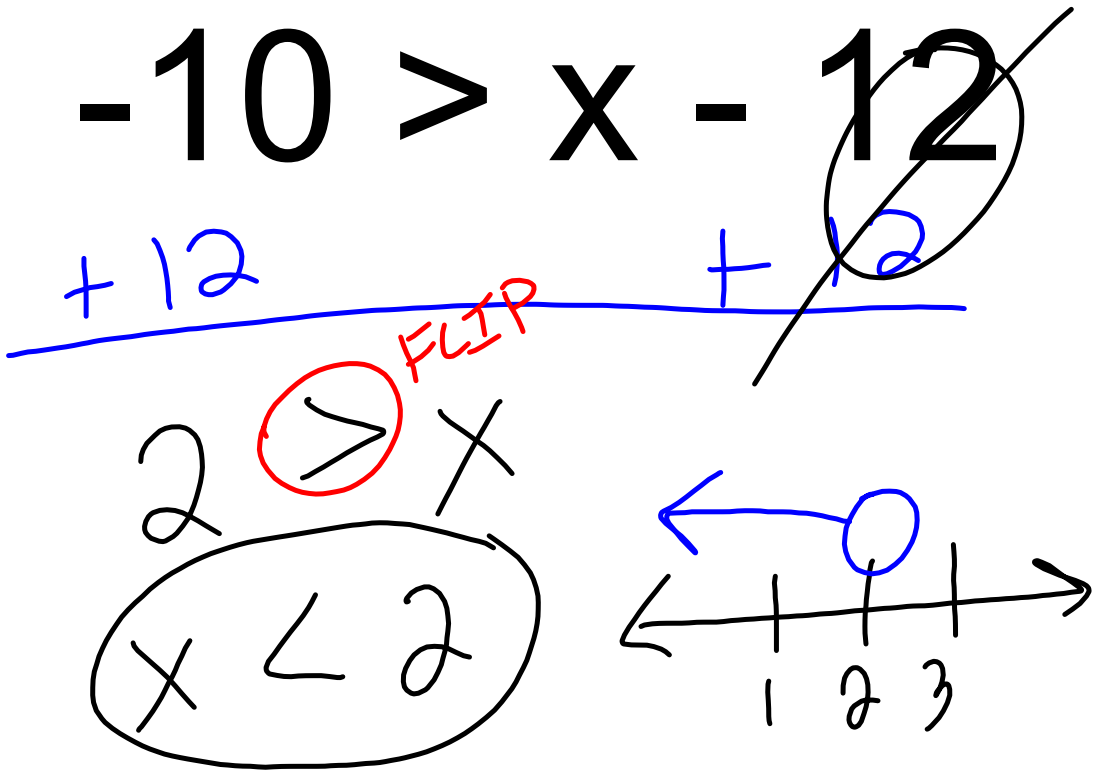


Solve the inequality. Then graph its solution.

2. $k - 12 < -4$

Solve the inequality. Then graph its solution.

3. $-10 > x - 12$



Solve the inequality. Then graph its solution.

4. $-1 \leq y + 7$

On the first two tests in math class. Collin had scores of 89 and 95 points. The third math test is tomorrow, and Collin's goal is to have a total score of 279 or higher on the three tests in order to have an A average for this quarter. What possible scores, $s$, can he have on the test tomorrow to attain his goal?

## Exit Pass 3.4

Explain how the graph of $x > 5$ is different from the graph of $x \geq 5$.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

**Workbook pg. 37 #6, 9-17**

# Reflection of Today's Lesson

# 3.4 Solving Inequalities Using Addition or Subtraction

7.NS.1
7.NS.2
7.EE

- SWBAT solve inequalities using addition or subtraction.
- SWBAT understand numbers; understand ways of representing numbers; compute fluently.

- Calculators: No

# Homework

pg. 141 #12-20 all, 21-37 odds