

November 24th

Due Next Class: TEST

Unit 4: Inequalities

Lesson 4.5: Inequalities Test Review

Get Ready:

**TEST ON MONDAY**

Sam cuts a 10 m rope into two pieces.

How long is the longer piece?

How long is the shorter piece?



**Inequalities SOS**

Will inequalities give us one exact value as the answer?  
 Range of solutions  
 equations (=)

$$-5t + 2 > 2$$

$$\frac{-5t}{4} > \frac{2}{4}$$

$$4\left(\frac{-5t}{4}\right) > (4)\left(\frac{2}{4}\right)$$

$$-5t > 2$$

$$t < 0$$

$\geq, \leq$

What is the difference?

$x > 8$        $8 > x$   
 x is greater than 8.      8 is greater than x.

$8 < x$        $x < 8$

Write the Inequality

$x < -2$  OR  $x > 2$

11)  $\frac{n}{3} > 1$  OR  $n < 8$

$\frac{n}{3} > 1$  or  $n < 8$   
 $n >= 3$  or  $n < 1$

12)  $8m - 5 < 6 - 3m$  AND  $6 - 3m < 8m + 6$

$$\begin{aligned} 8m - 5 &< 6 - 3m \\ +3m & \quad +3m \\ 11m - 5 &< 6 \\ +5 & \quad +5 \\ 11m &< 11 \\ m &\leq 1 \end{aligned}$$

AND

$$\begin{aligned} 6 - 3m &< 8m + 6 \\ +3m & \quad +3m \\ 6 &< 11m + 6 \\ -6 & \quad -6 \\ 0 &< 11m \\ 0 &\leq m \end{aligned}$$

AND

Mr. Rogers is baking some cookies for his advisory. He has already spent \$9 on supplies but would also like to get candy. He **doesn't want to spend more than \$23** on all of the treats. If each bag of candy costs \$1.25, then what is the most number of bags that Mr. Rogers can buy?



$$9 + 1.25x \leq 23$$

$$-9 \quad -9$$

$$1.25x \leq 14$$

$$\frac{1.25x}{1.25} \leq \frac{14}{1.25}$$

$$x \leq 11.2$$

At most, Mr. Rogers can purchase 11 bags of candy.

- What does it mean for a point to be a solution to a linear inequality?
- ① Pt. in the shaded area
  - ② Pt. is on a solid line
  - ③ Substitute pts. into the inequality & if they make the inequality true.

**Shaded**

$(-1, 1)$

$y > 3x + 1$

$1 > 3(-1) + 1$   
 $1 > -3 + 1$   
 $1 > -2$   
**True**

**On dotted line**

$(0, 1)$

$y > 3x + 1$

$1 > 3(0) + 1$   
 $1 > 0 + 1$   
 $1 > 1$   
**False**

**Non-Shaded Region**

$(2, 0)$

$y > 3x + 1$

$0 > 3(2) + 1$   
 $0 > 6 + 1$   
 $0 > 7$   
**False**

$y > 3x + 1$

$\geq$	Line
$\leq$	Solid
$>$	Dashed
$<$	

$>$	Shading
$\geq$	Above
$\leq$	Below
$<$	