MARCH 3, 2016

UNIT 5: LINEAR EQUATIONS AND INEQUALITIES

SECTION 6.3: INTRODUCTION TO LINEAR INEQUALITIES

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MATH 9

WHAT'S THE POINT OF TODAY'S LESSON?

We will begin working on the Math 9 Specific Curriculum Outcome (SCO) "Patterns and Relations 4" OR "PR4" which states:

"Explain and illustrate strategies to solve single variable linear inequalities with rational coefficients within a problem-solving context."

What does THAT mean???

SCO PR4 means <u>MORE</u> ALGEBRA, but without the equals sign!!!

The symbols we will use....

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

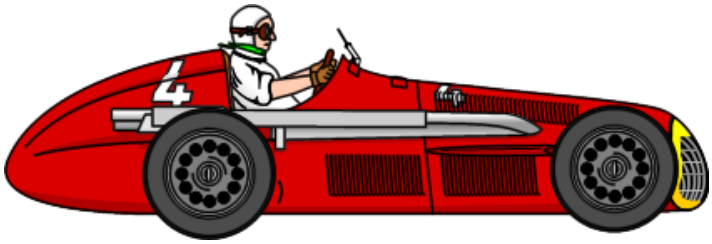
What is an inequality?

We use inequalities to model situations that can be described by a RANGE of numbers instead of a single number.

Which of these inequalities describes the time, *t* minutes, for which a car could be legally parked?

$t > 30$ $t \geq 30$

$t < 30$ $t \leq 30$



Define a variable and write an inequality for each of the following situations:

Variable: *s*, speed

Inequality: $s \leq 55$

Variable: *t*, *t*emperature

Inequality: $t < 4$

Variable: *h*, height

Inequality: h ≥ 102

Variable: *a*, age

Inequality: a ≥ 14

DETERMINING WHETHER A NUMBER IS A SOLUTION TO AN INEQUALITY:

Is each number below a solution of the inequality

$$b \geq -4 \text{ ?}$$

Possible solutions: ~~-8~~ -3.5 -4 ~~-4.5~~ 0

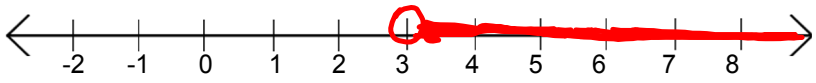
✓ ✓ ✓

Graphing inequalities:

3 possible solutions would be:

$a > 3$

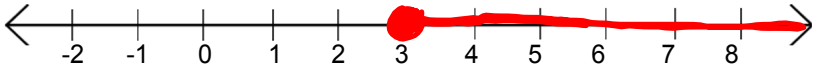
open circle



4, 5, 6

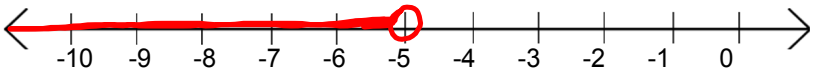
$a \geq 3$

closed circle



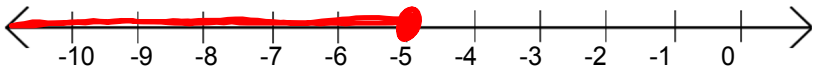
3, 4, 5

$b < -5$



-6, -7, -8

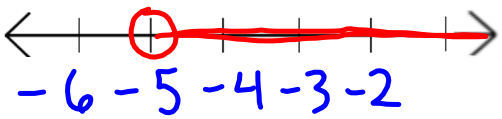
$b \leq -5$



-5, -6, -7

Graph each inequality on a number line. Write 3 numbers that are solutions of each inequality.

a) $t > -5$



b) $-2 \geq x$

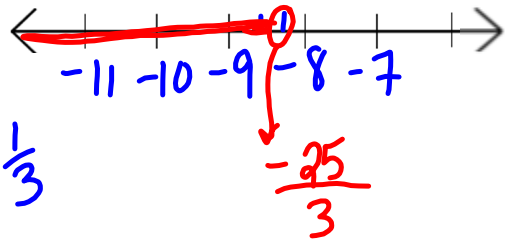
$x \leq -2$

c) $0.5 \leq a$

$a \geq 0.5$

d) $p < -\frac{25}{3}$

$p < -8\frac{1}{3}$



What inequalities are represented in the following graphs?

1) 

$x \leq -1$

2) 

$x > 2$

CONCEPT REINFORCEMENT:

***MMS9*:**
Page 292: #3 to #6 & #9
Page 293: #10, #13 & #15a

Be sure to check your answers in the back of the book as part of your homework. The answers for this section begin on page 515.