Section 6.5:
Solving Linear Inequalities using Multiplication/Division

Complete Investigation Worksheet

Part C: Multiply by a Positive/Negative Number

Operation	$-4 \; < \; -2$	$6 \; > \; 2$
MULTIPLY each side of the inequality by a **positive** number		
MULTIPLY each side of the inequality by a **negative** number		

Do the inequalities hold true? _____

Part D: Divide by a Positive/Negative Number

Operation	$-4 \; < \; -2$	$6 \; > \; 2$
DIVIDE each side of the inequality by a **positive** number		
DIVIDE each side of the inequality by a **negative** number		

Do the inequalities hold true? _____

SUMMARY OF INEQUALITIES

C. When you **MULTIPLY** each side of an inequality by a positive number

_____

When you **MULTIPLY** each side of an inequality by a negative number

_____

D. When you **DIVIDE** each side of an inequality by a positive number

_____

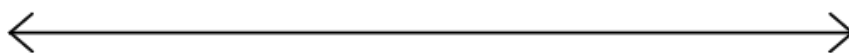When you **DIVIDE** each side of an inequality by a negative number

_____

Solving inequalities is the exact same as solving an equation with **one exception**:

When MULTIPLYING OR DIVIDING an inequality by a
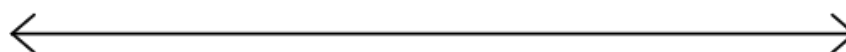
NEGATIVE number ⟶ REVERSE the inequality symbol

Example 1:

Solve the inequality and graph the solution.

a) -5s $\leq$ 25
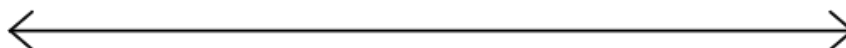
$$\longleftarrow\xrightarrow{\hspace{8cm}}$$

b) 7a < -21

$$\longleftarrow\xrightarrow{\hspace{8cm}}$$

c) $\underline{x}$ > -3
   -4

$$\longleftarrow\xrightarrow{\hspace{8cm}}$$

Example 2:

Solve and verify: -2.6a + 14.6 > -5.2 + 1.8a

Example 3:

A super-slide charges $1.25 to rent a mat and $0.75per ride. Jason has $10.25. How many rides can Jason go on?

a) Choose a variable and write an inequality.

b) Solve the problem.

c) Graph $\longleftarrow\!\!\!\!\longrightarrow$