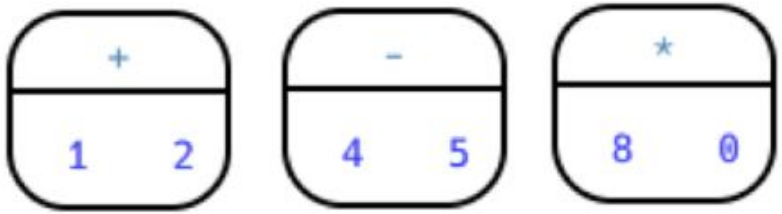
# Simple Inequalities


@BootstrapWorld

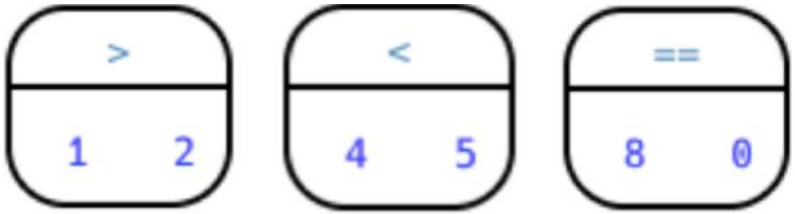
# Introducing Booleans

Convert these Circles of Evaluation into code. Then, log into [code.pyret.org (CPO)](code.pyret.org) and see what the code evaluates to.



# Introducing Booleans

Hypothesize: What do these Circles of Evaluation mean? What do they evaluate to?



# Introducing Booleans

Values like `true` and `false` obviously aren't Numbers or Images. But they also aren't Strings, or else they would have quotes around them.

We've found a **new data type**, called a ***Boolean***.

# Introducing Booleans

- Open the Boolean Starter File.
- Explore the five functions in this starter file.
- All five functions produce ***Booleans***.
- Through your exploration, see if you can come up with an explanation of what a ***Boolean*** is.

# Introducing Booleans

- Turn to Boolean Functions and use the Boolean Starter File to complete the questions.
- Identify inputs that will make each function produce `true`.
- Identify inputs that will make each function produce `false`.

# Introducing Inequalities

Equations typically have finite solution sets: there's only one answer for an unknown, or perhaps several answers.

Inequalities, on the other hand, can have *infinite* solutions.

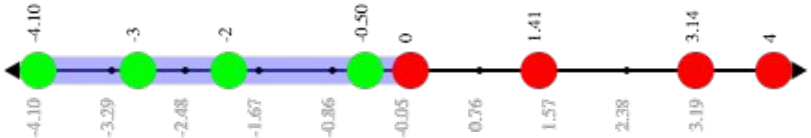
Inequality expressions divide all of the numbers in the universe into two categories: solutions and non-solutions.

# Introducing Inequalities

- We are going to practice identifying whether or not a given number is part of the ***solution set***.
- Open the Simple Inequalities Starter File and click "Run".
- Look at the graph that appears, as well as the provided code (lines 10, 18, and 26).

# Introducing Inequalities

- What do you Notice?
- What do you Wonder?

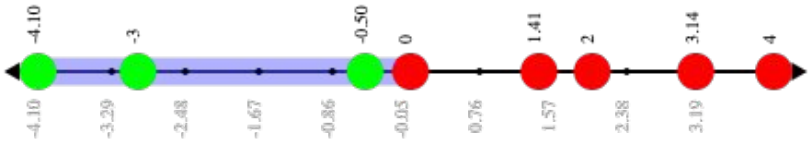


# Introducing Inequalities

- Look at line 18 in the Simple Inequalities Starter File.
- Edit the list of values by deleting *one* of the `negative signs`.
- Hit "Run" and examine the graph that appears.

# Introducing Inequalities

How is this graph different from the one you first produced?




Challenge yourself: Find 4 true examples and 4 false

# Introducing Inequalities

- Complete Simple Inequalities with a partner, identifying solutions and non-solutions to each inequality and testing them in the Simple Inequalities Starter File.
- For each inequality, find 4 solutions and 4 non-solutions.
- Try using negatives, positives, fractions and decimals as you generate your lists.

# Introducing Inequalities

What patterns did you observe in how the inequalities worked?


# Additional Exercises

Word Problem: is-hot