Sprint 2 User Stories, MOSCOW, Hours:

1. Account Authentication, Must Have, 4 hours
2. Basic Operations, Must Have

* JavaScript Classes, 4 hours
* Parser, 1 Hour
* Two isomorphic subtree detection,

3) Syntax-Tree GUI, Must Have, 8 Hours

GUI notes:

* Navbar height = 40px
* Main content box = 1000px
  + Left view = equations = ~500px
  + RIght view = tree = ~500px
* Left toolbar = 150px if there’s room
* HIGHLY RECOMMEND FLEX BOX DISPLAY TYPE

ScratchPad GUI Breakdown:

* Should be two screens in main content
  + main content should be horizontally centered in the screen.
  + left should be equation view
    - when user clicks on equation, that equation should show in treeview
  + right should be treeview
    - tree view should have small plus sign in upper left corner
    - when user hovers over plus sign should be descriptive text
    - when user clicks plus sign treeview expands to take up entire content area
    - equal sign in circle in upper left corner (next to plus sign) of treeview when user clicks button view is automatically transposed so equal node is in view
    - should be interactable, user can click node in tree
    - second tree maybe?
    - above it are tabs to bring up different windows with different options (graphs)
  + equations and tree will be displayed as an array of tree objects
* Bottom screen should contain the input text area and enter button
  + both should align two screens listed above
* Ctrl+Click to drag
  + entire tree should transpose
* Scroll wheel
  + zoom in and zoom out
* Selection of multiple nodes
* Navigation Bar horizontally at top
  + clicking login button pops up same pop up as save button does when user is not logged in
  + drop down box on the left side for additional information (contact us, about, etc.)
  + middle shows our logo
  + clicking logo brings us to welcome page
  + right side has login/logout button
  + when user is logged in, their name is displayed and clicking their name brings them to their dashboard
* If users want to save work as guest there will be button to login or register an account
  + pop up in middle of screen asking them to login or register
  + save all of their work once after signing up
  + after user logs in, they should land on the page of a list of their scratchpads from most recent to least recent (/dashboard)
* Toolbar vertically on the left side of screen
  + if screen is big enough, if not toolbar will appear above the screen
  + has save button in bottom
    - save has a *login* underneath clicking this button while not logged in will cause an alert box to pop up on middle of screen with login and registration options
  + has a download button
  + top has the name of the scratchpad

Operations to keep in Mind:

* Commutativity
* Associativity
* Distributive
* Cancellation
* Addition
* Subtraction
* Multiplication
* Division
* “Samsies”
* Make Parens
* Inversability