# Math Cheat Sheet

## Problem Statement

Back when you were in school, if your math teacher/professor was kind, he/she would allow you a cheat sheet on tests. The goal of this assignment is to be able to easily create such a cheat sheet.

## Requirements

As a student…

1. I want to be able to create a cheat sheet with a name.
2. I want to be able to create a formula with any of the following operations
   1. Parentheses
   2. Exponentiation (including roots)
   3. Multiplication/Division
      1. Division should read from top to bottom (i.e. “x/y” is not acceptable)
   4. Addition/Subtraction
   5. **Bonus (optional):** Integrals/derivatives, matrices
3. I want to be able to add formulae to a cheat sheet
4. I want to be able to view a “printable” version of my cheat sheet
   1. The printable version should display the name, and all of the formulae associated with it in an organized manner

## Starting out

This problem is not supposed to test your knowledge of ASP.NET MVC, because that would be boring 😊. To help with that, your starting project will include some scaffolding/implementation, including the MVC for a cheat sheet model with a name (that’s right, requirement 1 is almost done for you). Your job is to figure out the best way to get user input for a cheat sheet, and how to display it nicely. [Here](https://www.toptal.com/designers/htmlarrows/math/) is a link to the HTML codes for all of the math symbols which you may need.

### Setting up the project

1. Make sure you have the EntityFramework package installed from NuGet
2. Open the supplied solution in Visual Studio (you may have to edit your applicationhost config file to match your solution’s local path). If that doesn’t work, you may want to just copy/import the files from the Model/View/Controller folders to a blank MVC project and start from there.
3. Run the following commands from the NuGet Package Manager Console

Enable-Migrations

Add-Migration -Name Initial

Update-Database

1. This should create a database for you. To add the connection:
   1. Open your server explorer in the top-left of Visual Studio
   2. Right-click Data Connections and click “Add Connection”
   3. For the server name, type “(LocalDb)\MSSQLLocalDB”. For the database name, as you start to type “MathCheatSheet”, it should auto-complete for you.

### Examples of formulae for testing

* Euler’s identity
* The quadratic formula