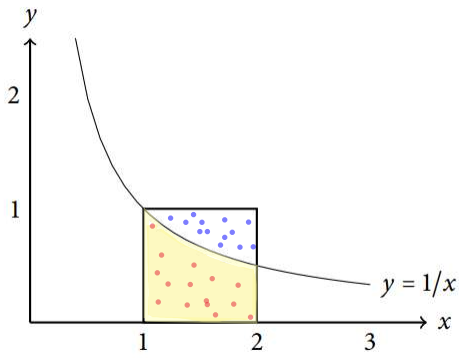
CPSC 1160 Lab I

The purpose of today's lab is to make sure you can write a simple program in C++ and become familiar with the random number generator `rand()`.

We can use random numbers and random variates to estimate areas and irrational numbers.

Recall that $\ln 2 = \int_1^2 \frac{1}{x} dx$.

We can estimate ln 2 by estimating the area under the graph of y = 1/x between 1 and 2



Idea: Throw n uniformly random points in the square [1, 2] × [0, 1]. Suppose m of those points fall under the graph of y = 1/x. Then, m/n should approximately equal ln2/1.

Write a C++ program to estimate ln2. Try different n and compare your result with the *log* function defined <cmath>. (You need to #include <cmath> at the top of your program)

Submit your program to D2L by the end of today.