The Math Library (`cmath`)

Function	Computes
`int abs(int x)`	Absolute value of an integer `x`
`double acos(double x)`	Angle whose cosine is `x`
`double asin(double x)`	Angle whose sine is `x`
`double atan(double x)`	Angle whose tangent is `x`
`double atan2(double x, double y)`	Angle whose tangent is `x/y`
`double ceil(double x)`	Smallest whole number greater than or equal to `x`
`double cos(double x)`	Cosine of angle `x` (measured in radians)
`double exp(double x)`	e^x
`double fabs(double x)`	Absolute value of a real number `x`
`double floor(double x)`	Largest whole number less than or equal to `x`
`double log(double x)`	Natural log of `x`
`double log10(double x)`	Log base 10 of `x`
`double pow(double x, double y)`	x^y
`double sin(double x)`	Sine of angle `x` (measured in radians)
`double sqrt(double x)`	Square root of `x`
`double tan(double x)`	Tangent of angle `x` (measured in radians)

Note: You'll need `#include <cmath>` at the beginning of your code to use these functions. The math library also contains many useful constants, such as `PI`.

Random Numbers

The `rand` function is used to generate random numbers. The call `rand` returns a random integer between 0 and 2147483647. The expression `rand()%n` can be used to produce a random integer be `0` and (`n-1`). **Prior to using the `rand` function a seed value must be set using the expression, `srand(time(0))`. This function call should only be once in the program.**

`srand(time(0))`	Seeds the random number generator with the number of seconds elapsed since newyear 1970). Placing the number 1 as the parameter guarantees the same random number each time. This should only be called once in a program.
`rand()`	Returns a random integer between 0 and 2147483647, inclusive.
`rand()%6`	Returns a random integer between 0 and 5, inclusive