Some other functions: Part 1

The video introductions to functions have covered the six trig functions (sin, cos, tan, cot, csc, and sec) and the inverse functions for the first three, namely, arcsin (also written as $\sin^{-1}$), arcos (also written as $\cos^{-1}$), and arctan (also written as $\tan^{-1}$). At this point we want to take a brief look at a few other math functions.

abs(x)   produces the absolute value of the argument. The absolute value is the value without the sign. abs(x) accepts any real number as its argument. Its corresponding range will be non-negative values. Thus, abs(4) is 4, abs(-4) is 4, abs(0) is 0, abs(23.12) is 23.12 and abs(-4538.23) is 4538.23.

int(x)   is a common function in computer languages. Unfortunately it has a different meaning in different languages. The more common meaning is that int(x) becomes the largest integer less than or equal to the value of x. In that sense, int(5) is 5, int(5.34) is 5, int(5.998) is 5, int(0) is 0, int(-3) is -3 but int(-2.9) is -3, and int(-2.05) is -3. The other implementation of int(x) is that it becomes the integer portion of the value of x. In this second sense int(5) is 5, int(5.34) is 5, int(5.998) is 5, int(0) is 0, int(-3) is -3, but int(-2.9) is -2 and int(-2.05) is -2. Whenever you are going to use the int(x) function you need to verify which meaning is implemented in the language you are using.

floor(x)   is available in some computer languages. It is strictly the largest integer less than or equal to the value of x. This definition corresponds to the first interpretation of the int(x) function. Thus, floor(5) is 5, floor(5.34) is 5, floor(5.998) is 5, floor(0) is 0, floor(-3) is -3, floor(-2.9) is -3, and floor(-2.05) is -3.

ceil(x)   is a function that is available in some computer languages (the name comes from ceiling as opposed to the floor(x) function). ceil(x) is the smallest integer greater than or equal to x. Thus, ceil(5) is 5, but ceil(5.34) is 6, ceil(5.998) is 6, while ceil(0) is 0, ceil(-3) is -3, ceil(-2.9) is -2 and ceil(-2.05) is -2.