

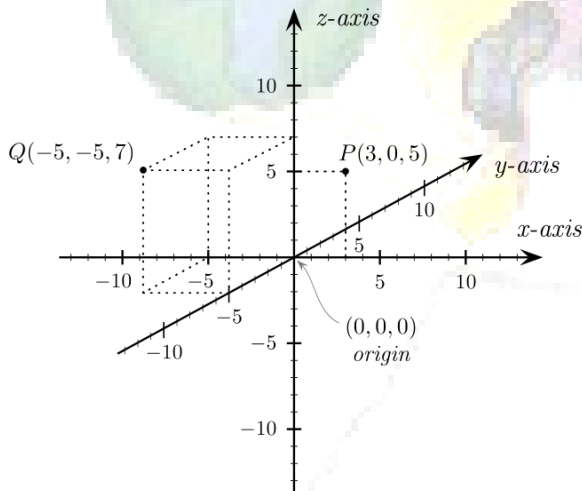
Alice Slick Sheet

Movement of Objects

For the purpose of this Slick Sheet we will define the Cartesian coordinate system¹ as follows:

The three dimensional Cartesian coordinate system provides the three physical dimensions of space — length, width, and height. The Figure below shows the method of representing length, width, and height used in this Slick Sheet. Another common way is to have the positive x-axis pointing toward the observer.

The three Cartesian axes defining the system are perpendicular to each other. The relevant coordinates are of the form (x,y,z) . As an example, the figure shows two points plotted in a three-dimensional Cartesian coordinate system: $P(3,0,5)$ and $Q(-5,-5,7)$. The axes are depicted in a "world-coordinates" orientation with the z-axis pointing up.



When directing an object, imagine it to be in the x-z plane facing in the $-y$ direction. Imagine the x, y, and z axes of rotation for the object intersecting at $(0,0,0)$ ^{2,3}

With the above in mind, movement of objects in Alice can be correlated to the Cartesian coordinate system as follows:

Move	Up	+z
	Down	-z
	Left	+x
	Right	-x
	Forward	-y
	Backward	+y

Turn	Left	Spin counterclockwise on z-axis
	Right	Spin clockwise on z-axis
	Forward	Spin in $-y$ direction
	Backward	Spin in $+y$ direction
Roll	Left	Spin in $+x$ direction on y-axis
	Right	Spin in $-x$ direction on y-axis

¹ This definition was adapted from the [Cartesian Coordinate System](#) definition found at Wikipedia.com.

² The object's axes of rotation may be and probably will be above the ground, and may or may not be at the object's center of mass. For example, a person object's axes of rotation point $(0,0,0)$ is at its center of mass whereas an arm object's axes of rotation point $(0,0,0)$ is at the shoulder joint.

³ When the *asSeenBy* argument is used for the *Move*, *Turn*, and *Roll* methods, the axes of rotation is set to the axes of rotation for the object that is referenced in the *asSeenBy* argument.