Cartesian coordinates (x,y,x)

The planes determined by the coordinate axes are

the xy-plane, whos equation is z=0 (rectangular coordinate system)

the yz-plane, whos equation is y=0

the xz-plane, whose equation is x=0

They all meet at the origin, (0,0,0)

Distance and Spheres in Space

$P_1 = (X_1, Y_1, Z_1)$, $P_2 = (X_2, Y_2, Z_2)$
$\sqrt{[(X_2 - X_1)^2 + (Y_2 - Y_1)^2 + (Z_2 - Z_1)^2]}$

Vectors

Force vectors	points in the direction in which the force acts and its length is a measure of the force's strength
Velocity vector	points in the direction of motion and its length is the speed of the moving object
Vectors	represented by line segment AB has initial point A and terminal point B and its length is denoted by |AB|
component form in 2D	$v = \langle v_1, v_2 \rangle$
component form in 3D	$v = \langle v_1, v_2, v_3 \rangle$
	Two vectors equal if and only if their standard position vectors are identical.