



The diagram illustrates a vector in a 2D coordinate system. A line segment is drawn at a 45-degree angle to the horizontal axis. A point is marked on this line at the coordinates (1, 1). From this point, a vector (represented by a line with an arrow) points to another point. The coordinates of this second point are given as $(1 + \cos(45), 1 + \sin(45))$. The vector's components are the cosine and sine of 45 degrees, added to the original coordinates.

$$(1, 1) + (\cos(45), \sin(45)) = (1 + \cos(45), 1 + \sin(45))$$