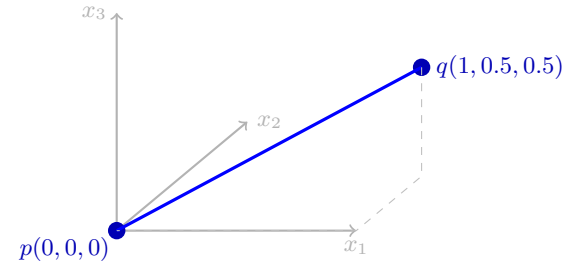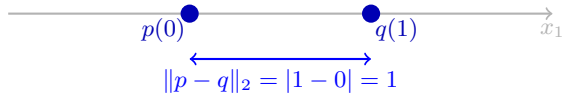**3D: Three Features (Blood Pressure, Heart Rate, Age)**

$$\|p - q\|_2 = \sqrt{(1)^2 + (0.5)^2 + (0.5)^2} \approx 1.22$$

1D: One Feature (Blood Pressure)

x_3

$q(1, 0.5, 0.5)$

x_2

$p(0)$ $q(1)$ x_1

$p(0,0,0)$ x_1

$\|p - q\|_2 = |1 - 0| = 1$

Adding more dimensions increases distance: even small differences along each axis combine through the Euclidean formula. In higher dimensions, points are pushed away from each other, making all patients seem far apart.