$A = [3, 4]$ x_1, y_1

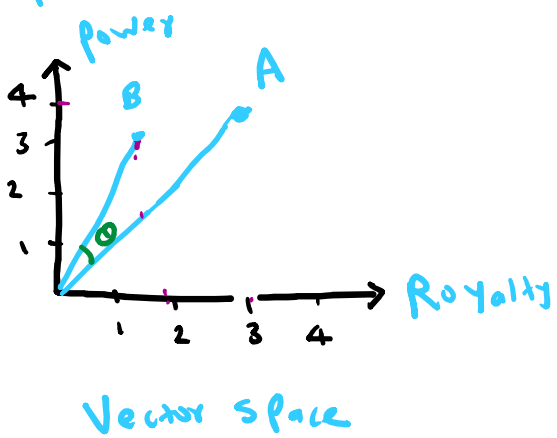
$B = [2, 3]$ x_2, y_2

Royalty ↑ Power →

① Manhatten distance :

$$|x_2 - x_1| + |y_2 - y_1|$$

$$|2-3| + |3-4| = |-1| = 2$$



Vector space

② Euclidian distance : $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

$$c^2 = a^2 + b^2$$

$a = x_2 - x_1$

$b = y_2 - y_1$

$$c^2 = (x_2-x_1)^2 + (y_2-y_1)^2$$

$$c = \sqrt{\quad}$$

③ Cosine Similarity : $\cos\theta$

$\cos\theta = 1$ ← Similar

$\cos 90 = 0$ ← Dis-similar

$\cos 180 = -1$

④ Dot product : $|a||b|\cos\theta$

$$|a| = \sqrt{x^2 + y^2}$$

$x \cdot 1 \Rightarrow x$

$x \cdot 0 = 0$