

1. (a) Two items will have high cosine similarity if they are pointing in roughly the same direction ≈ 1 , and they will have high Euclidean distance similarity if their points are far from each other.

Two vectors parallel to each other, pointing at the same direction, and are close to each other, will have high cosine similarity and low Euclidean distance similarity.

Two vectors parallel to each other, pointing in the opposite direction, and are far from each other, will have low cosine similarity and high Euclidean distance similarity.

- (b) Euclidean distance similarity will change as cosine similarity depends on the direction of the vector, not the distance between them.