

2.A.

construct dentist bridge tooth

$$\text{Query} = (2.813, 5.521, 3.912, 4.605)$$

$$\text{Document 1} = (5.627, 0, 31.296, 0)$$

$$\text{Document 2} = (2.813, 5.521, 7.824, 27.631)$$

B.

$$\cos(\text{Query}, \text{Document 1}) = \frac{\text{Query} \cdot \text{Document 1}}{\|\text{Query}\| \cdot \|\text{Document 1}\|} = 0.502$$

$$\cos(\text{Query}, \text{Document 2}) = \frac{\text{Query} \cdot \text{Document 2}}{\|\text{Query}\| \cdot \|\text{Document 2}\|} = 0.772$$

Thus, Document 2 is a better match to the query.