M. Baihaqi A. A.

2I / 17 / 2291720145

No.

Date

1 $a = 5i + 4j + 2k \quad b = 4i - 5j + 3k \quad c = 2i - j - 2k$

corrector = dzhar

a. $a \cdot b = 5 \cdot 4 + 4 \cdot (-5) + 2 \cdot 3$

$= 20 + (-20) + 6 = 6$

$|a| = \sqrt{5^2 + 4^2 + 2^2}$

$= \sqrt{45} = 3\sqrt{5}$

$|b| = \sqrt{4^2 + (-5)^2 + 3^2}$

$= \sqrt{50} = 5\sqrt{2}$

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$l = \frac{5}{3\sqrt{5}} \quad m = \frac{4}{3\sqrt{5}} \quad n = \frac{2}{3\sqrt{5}} \quad l' = \frac{4}{5\sqrt{2}} \quad m' = \frac{-5}{5\sqrt{2}} \quad n' = \frac{3}{5\sqrt{2}}$

$\cos \theta = \frac{5}{3\sqrt{5}} \cdot \frac{4}{5\sqrt{2}} + \frac{4}{3\sqrt{5}} \cdot \frac{-5}{5\sqrt{2}} + \frac{2}{3\sqrt{5}} \cdot \frac{3}{5\sqrt{2}}$

$= \frac{20}{15\sqrt{10}} + \frac{20}{15\sqrt{10}} + \frac{6}{15\sqrt{10}} = \frac{6}{15\sqrt{10}} = \frac{2}{5\sqrt{10}} \approx 0{,}126491 \approx 73.57^\circ$ (arccos)

b.

$a \times b = \begin{vmatrix} i & j & k \\ 5 & 4 & 2 \\ 4 & -5 & 3 \end{vmatrix} \begin{matrix} i & j \\ 5 & 4 \\ 4 & -5 \end{matrix}$

$= (i \cdot 4 \cdot 3) + (j \cdot 2 \cdot 4) + (k \cdot 5 \cdot -5) - (4 \cdot 4 \cdot k) - (-5 \cdot 2 \cdot i) - (3 \cdot 5 \cdot j)$

$= 22i - 7j - 41k$

$|a \times b| = \sqrt{22^2 + 7^2 + (-41)^2}$

$= 3\sqrt{246}$

$|c| = \sqrt{2^2 + (-1)^2 + (-2)^2}$

$= \sqrt{9} = 3$

$l = \frac{22}{3\sqrt{246}} \quad m = \frac{-7}{3\sqrt{246}} \quad n = \frac{-41}{3\sqrt{246}} \quad l' = \frac{2}{3} \quad m' = \frac{-1}{3} \quad n' = \frac{-2}{3}$

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$\cos \theta = \frac{22}{3\sqrt{246}} \cdot \frac{2}{3} + \frac{-7}{3\sqrt{246}} \cdot \frac{-1}{3} + \frac{-41}{3\sqrt{246}} \cdot \frac{-2}{3}$

$= \frac{44}{9\sqrt{246}} + \frac{7}{9\sqrt{246}} + \frac{81}{9\sqrt{246}} = \frac{133}{9\sqrt{246}} \approx 0{,}341669 \simeq 19.98^\circ$ (arccos)

2. implementasi metode klasifikasi dengan Algoritma Support Vector Machine untuk Menentukan stok Persediaan Barang Pada koperasi karyawan Pangan utama

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