



$$\frac{1}{3\sqrt{2}}(3, 3)$$

$$= \frac{3}{3\sqrt{2}}) \frac{3}{3\sqrt{2}} = \frac{1}{\sqrt{2}}) \frac{1}{\sqrt{2}}$$

$$\frac{3}{3\sqrt{14}}, \frac{6}{3\sqrt{14}}, \frac{3}{3\sqrt{14}}$$

$$v = AB = (-2)^{-4})$$

Find a vector parallel to  $\vec{a} = \langle -3, -6, -2 \rangle$

$$\vec{u} = \frac{\vec{a}}{\|\vec{a}\|} =$$

$$u = \frac{-3, -6, -2}{\sqrt{7}} =$$

$$\vec{v} = w \cdot \vec{u} = \frac{10}{\sqrt{7}} (-3, -6, -2)$$

$$\frac{\sqrt{77}}{10} (-6, -4, -5) \times 10$$

$$\frac{6}{\sqrt{89}} (-2, 7, -6)$$

$$\frac{6}{2\sqrt{10}} (-3, 2)$$

$$u = (3, -15) = \sqrt{306}$$

$$\sqrt{128} + \sqrt{50}$$

$$(-14, -12) 13\sqrt{2}$$

$$= \sqrt{340}$$

$$\sqrt{29}$$

$$(x, y, z) = (12, 8, 13)$$

$$\vec{a} = 2\vec{i} + 3\vec{j} + 6\vec{o} + 7\vec{j}$$

$$30\vec{i} + 10\vec{o}$$

$$\cos \theta = \frac{\vec{v} \cdot \vec{w}}{|\vec{v}| \cdot |\vec{w}|}$$

$$\vec{a} = \langle 4, -5, 1 \rangle$$

$$\vec{b} = \langle 5, 0, k \rangle$$

$$\Rightarrow \vec{a} \cdot \vec{b} = \frac{20 + k}{\sqrt{42} \cdot \sqrt{k^2 + 25}} = 0$$

-2

$$\frac{\sqrt{6} \cdot \sqrt{19}}{\sqrt{42}}$$

$$\langle x, y, z \rangle = \langle 7, 4, 6 \rangle$$

$$\cos \alpha = \frac{7}{\sqrt{101}}$$

$$\cos \beta = \frac{4}{\sqrt{101}}$$

$$\cos \gamma = \frac{-6}{\sqrt{101}}$$

$$\vec{a} = \langle -5, 1, -3 \rangle$$

$$\vec{b} = \langle -4, -4, 5 \rangle$$

(Hãm  $\vec{b}$  len  $\vec{a}$ )

$$\text{proj}_{\vec{a}} \vec{b} = \left( \frac{\vec{b} \cdot \vec{a}}{|\vec{a}|^2} \right) \cdot \vec{a}$$

$$= \frac{2}{35} \langle -5, 1, -3 \rangle$$

$$\text{proj}_{\vec{b}} \vec{a} = \left( \frac{\vec{a} \cdot \vec{b}}{|\vec{b}|^2} \right) \vec{b}$$

$$\frac{169}{140} \langle 1, -8, -9 \rangle$$

Given :

$$a(t) = \langle -2, 4, -1 \rangle t + \langle 3, 9, 8 \rangle$$

$$b(u) = \langle 5, 3, 4 \rangle u + \langle 6, 4, -8 \rangle$$

$$\vec{u_1} = \langle -2, 4, -1 \rangle$$

$$\vec{u_2} = \langle 5, 3, 4 \rangle$$

$$\cos \theta = \frac{\vec{u_1} \cdot \vec{u_2}}{\|u_1\| \|u_2\|} = \frac{-2}{5 \sqrt{42}}$$

$$\vec{a} - \text{proj}_{\vec{b}} \vec{a}$$

$$= \langle 8, -10, -9 \rangle -$$

$$\vec{r}(t) = \langle -3, -4, 0 \rangle t + \langle 5, 0, 5 \rangle$$

$$\overrightarrow{OA} = \langle 5, 0, 5 \rangle$$

$$\begin{cases} x = 5 \\ y = 4 + 4t \\ z = 0 - 2t \end{cases}$$

$$A(5, 4, 0)$$

$$\overrightarrow{OA} = \langle 5, 1, 0 \rangle$$

$$\vec{v} = \langle 0, 4, -2 \rangle$$

$$|\vec{v}| = 2\sqrt{5}$$

$$s = \frac{|\overrightarrow{OA} \times \vec{v}|}{|\vec{v}|}$$

$$\overrightarrow{OA} \times \vec{v} = \begin{vmatrix} i & j & k \\ 5 & 1 & 0 \\ 0 & 4 & -2 \end{vmatrix} = \langle -2, 10, 20 \rangle$$

$$\frac{6\sqrt{14}}{2\sqrt{5}} =$$

$$d_{(0), (4)} = \frac{|\overrightarrow{OA} \times \overrightarrow{u}|}{|\overrightarrow{u}|}$$

$$u = 16 (\cos 25^\circ i + \sin 25^\circ j)$$

$$v = 10 (\cos 45^\circ i + \sin 45^\circ j)$$

$$\begin{vmatrix} 1 & 8 & 8 \\ -4 & -7 & 1 \end{vmatrix} \hat{=} 64, -35, 25$$

$$(3, 2) - (3c, 5c) = 0$$

$$= (3c-3, 5c-2) \cdot (3, 5) = 0$$

$$= 3(3c-3) + 5(5c-2) = 0$$

$$\Rightarrow c = 0.5518$$

$$\frac{21}{1}, -18, 9$$

$$\sqrt[3]{94} \left\langle 21, -18, 9 \right\rangle$$

$$= \left\langle \frac{21}{\sqrt[3]{94}}, \frac{-18}{\sqrt[3]{94}}, \frac{9}{\sqrt[3]{94}} \right\rangle$$

$$A_{PQR} = \frac{1}{2} |\vec{PQ} \times \vec{PR}|$$

$$= \frac{1}{2} \sqrt{\quad}$$

$$\vec{PQ} = \langle 0, 1, 4 \rangle$$

$$\vec{PR} = \langle 3, -2, 4 \rangle$$

$$= \langle 12, 12, -3 \rangle$$

$$(3\sqrt{33}) \times \frac{1}{2}$$

$$\overrightarrow{PQ} = \langle 1, -7, -5 \rangle$$

$$\overrightarrow{PR} = \langle -6, -7, -11 \rangle$$

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$$\overrightarrow{PQ} = \langle 2, 3, 0 \rangle$$

$$\overrightarrow{PR} = \langle 5, 6, 2 \rangle$$

$$6, -4, -3$$

$$2\sqrt{6} \langle 3, 4, -1 \rangle$$

$$= \langle 6\sqrt{6}, 8\sqrt{6}, -2\sqrt{6} \rangle$$

$$u \cdot u = |u|^2$$

$$\vec{u} \cdot \vec{v} = 0$$

$$\vec{u} \cdot \vec{v} = \vec{v} \cdot \vec{u}$$

$$(\vec{u} \times \vec{v}) \cdot \vec{v} = 0$$

$$\begin{bmatrix} 2 \\ 1 \\ 0 \end{bmatrix} s \begin{bmatrix} 6 \\ 0 \\ 1 \end{bmatrix} t$$

$$\left( \begin{array}{cc|c} \frac{1}{2} & \frac{5}{4} & \frac{14}{n} \\ -\frac{1}{2} & -\frac{1}{4} & -\frac{11}{n} \\ 0 & 0 & n \end{array} \right)$$

$$\left( \begin{array}{cc|c} \frac{1}{2} & \frac{5}{4} & \frac{14}{n} \\ 0 & \frac{1}{4} & \frac{3}{n} \\ 0 & 0 & n \end{array} \right) \quad SP_2 - \cancel{R_2}$$

$$\left( \begin{array}{cc|c} \frac{1}{2} & \frac{0}{1} & \frac{1}{3} \\ 0 & \frac{1}{4} & \frac{3}{n} \\ 0 & 0 & n \end{array} \right)$$

$$x = 1$$

$$y = 3$$

$$y =$$