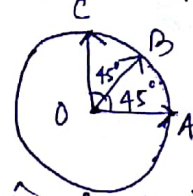


1. Find the resultant of the three vectors \vec{OA} , \vec{OB} & \vec{OC} shown in figure. Radius of circle is R.



2. If $\vec{A} = 2\hat{i} - 3\hat{j} + 7\hat{k}$, $\vec{B} = \hat{i} + 2\hat{k}$ and $\vec{C} = \hat{j} - \hat{k}$ find $\vec{A} \cdot (\vec{B} \times \vec{C})$.
3. If $\vec{a} = 2\hat{i} + 3\hat{j} + 4\hat{k}$ & $\vec{b} = 4\hat{i} + 3\hat{j} + 2\hat{k}$, find the angle between \vec{a} & \vec{b} .
4. If $\vec{A} = 2\hat{i} + 3\hat{j} + 4\hat{k}$ & $\vec{b} = 4\hat{i} + 3\hat{j} + 2\hat{k}$ find $\vec{A} \times \vec{b}$.
5. If $\vec{a} = \hat{i} - 2\hat{j} - 3\hat{k}$, $\vec{b} = 2\hat{i} + \hat{j} - \hat{k}$ and $\vec{c} = \hat{i} + 3\hat{j} - 2\hat{k}$ find $\vec{a} \times (\vec{b} \times \vec{c})$.
6. Find the vector of magnitude 18 which is perpendicular to both the vectors $4\hat{i} - \hat{j} + 3\hat{k}$ & $-2\hat{i} + \hat{j} - 2\hat{k}$.
7. Find the value of a for which the vectors $3\hat{i} + 3\hat{j} + 9\hat{k}$ & $\hat{i} + a\hat{j} + 3\hat{k}$ are parallel.
8. If \vec{A} and \vec{B} are two vectors such that $|\vec{A}| = 2$, $|\vec{B}| = 7$ & $\vec{A} \times \vec{B} = 3\hat{i} + 2\hat{j} + 6\hat{k}$ find the angle between \vec{A} & \vec{B} .
9. If $\vec{A} = \vec{B} - \vec{C}$, then determine the angle between \vec{A} & \vec{B} .
10. A force $\vec{F} = (5\hat{i} + 4\hat{j})$ newton displaces a body through $\vec{s} = (3\hat{i} + 4\hat{k})$ metre in 3s. Find the power.

1. $R(1+\sqrt{2})$ along \overrightarrow{OB} .

2. 0

3. $\theta = \cos^{-1}\left(\frac{25}{29}\right)$

4. $-6\hat{i} + 12\hat{j} - 6\hat{k}$

5. $-\hat{i} - 8\hat{j} + 5\hat{k}$

6. $-6\hat{i} + 12\hat{j} + 12\hat{k}$

7. $a = 1$

8. $\pi/6$

9. $\theta = \cos^{-1}\left(\frac{A^2 + B^2 - C^2}{2AB}\right)$

10. 5 W