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Chapter 3 "Vectors"

1- The angle between vector **B** = 4.0 **j** + 3.0 **k**, and the positive y axis is approximately: (A: 37 degrees)

2- Vector **A** = (5.0 **i** + 3.0 **j**)m, and vector **B** is 6m in length and making 120 degrees angle with +ve x-axis. Find **A**-**B**. (A: (8.0 **i** - 2.2 **j**) m)

3- If **a** = (3.0 **i** + 4.0 **j**) m and **b** = (5.0 **i** - 2.0 **j**) m, find the angle between the two vectors. (A: 75 degrees)

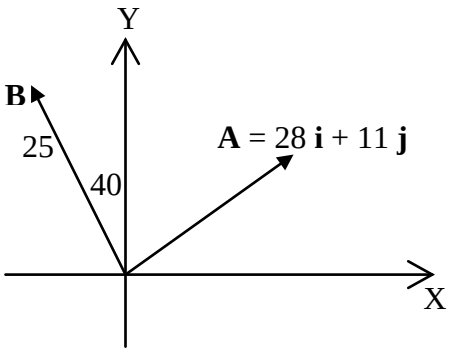
4- For the following three vectors;
A = 2 **i** + 3 **j** + 4 **k**, **B** = 4 **i** + 4 **j** and C = 2 **i** + 2 **k**, find **A.(B**x**A).** (A: 0)

5- A vector in the xy-plane has a magnitude of 25.0 and an x-component of 12.0. The angle that it makes with the positive x-axis is: (A: 61.3 degrees)

6- The unit vectors in the positive directions of the x, y, and z axes are labeled **i**, **j**, and **k**. The value of [**i**.(**j** x **k**)] is: (A: +1)

7- Two vectors **A** = 3 **i** + **j** + 2 **k** and **B** = 2 **i** + 4 **j** – q **k** (q is a constant) are perpendicular to each other. Find the constant q. (A: 5)

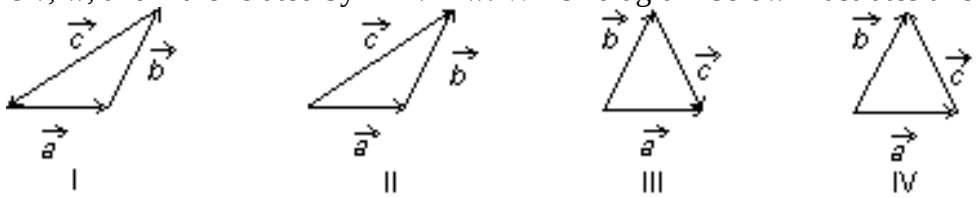
8- If vector **A** = 28 **i** + 11 **j**
and vector **B** (magnitude of B = 25) as shown in the figure, what is the magnitude of the sum of these two vectors? (A: 32)



9- Vector **A** = -6 **i** + 14 **j**. Find vector **B** whose magnitude is twice that of **A** and is opposite in direction to **A**. (A: 12 **i** - 28 **j**)

10- If vector **A** = 6 **i** - 7 **j** and vector **B** = -12 **i** + 10 **j**, what angle does vector **C** = 2***A** - **B** make with +x-axis measured counterclockwise. (A: 315º)

11- The vectors v, w, and x are related by x = v + w. Which diagram below illustrates this relationship? (A: II)



12- A vector of magnitude 3 CANNOT be added to a vector of magnitude 4 so that the magnitude of the resultant is: (A: zero)

A) zero B)1 C) 3 D) 5 E)7