1. Q1. Find the dot product of these two vectors and also the angles between them.

A = 2i + 7j + 15k B = 21i + 31j + 41k

**Code:-**

varA = [2, 7, 15];

varB = [21, 31, 41];

dot\_product = dot(varA, varB)

magnitude\_1 = norm(varA);

magnitude\_2 = norm(varB);

ang\_rad = acos(dot\_product / (magnitude\_1 \* magnitude\_2));

ang\_deg = rad2deg(ang\_rad)

**Output: -**

**A white screen with black text

Description automatically generated**

1. Q2. Find the cross product of these two vectors.

A = i - j + 2k B = 2i + 3j - 4k

**Code:-**

varA = [1 -1 2];

varB = [2 3 -4];

cross\_Product = cross(varA, varB)

plot(cross\_Product)

**Output: -**

**A white background with black text

Description automatically generated**

A line graph with numbers

Description automatically generated

1. Compute the cross product of these two vectors and also plot the AxB.

A = 3i - 1j + 5k B = 4j - 2k

**Code:-**

varA = [3 -1 5];

varB = [0 4 -2];

cross\_Product = cross(varB, varA)

plot(cross\_Product)

**Output: -**

**A white background with black text

Description automatically generated**

A line graph with numbers

Description automatically generated

1. Find the cross product of these two vectors and also plot the AxB.

A = 1i + 6j - 8k B = 4i -2j - k

**Code:-**

varA = [1 6 -8];

varB = [4 -2 -1];

cross\_Product = cross(varA, varB)

plot(cross\_Product)WT

**Output: -**

A white background with black text

Description automatically generated

A graph with a line

Description automatically generated

1. Find the cross product of three vectors and also plot the AxBxC.

A = 3i + 1k B = 4i - 2j + k C = 5i + 3j – k

**Code:-**

varA = [3 0 1];

varB = [4 -2 1];

varC = [5 3 -1];

crs\_pdt = cross(varA, varB);

cross\_product = cross(crs\_pdt, varC)

plot(cross\_Product)

**Output: -**

**A white background with black text

Description automatically generated**

A graph with a line

Description automatically generated

6. Evaluate (A+B) x , and also plot the result.

1. A = i + 2j - 4k B = -5i + 3j - 7k C = -i + 4j + 2k

**Code:-**

varA = [1 2 -4];

varB = [-5 3 -7];

varC = [-1 4 2];

crs\_pdt = cross(varA, varB);

cross\_product = cross(crs\_pdt, varC)

plot(cross\_Product)

**Output: -**

A white background with black text

Description automatically generated

A graph of a triangle

Description automatically generated