

ชื่อ.....เลขที่.....ภาควิชา.....

1. ใช้ DEV C++ เขียนโปรแกรมด้านล่าง แล้วทำการแปล(compile)และปฏิบัติโปรแกรม(run)

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#include<stdio.h>
#include<conio.h>
#include<math.h>
struct Vector{
    float x;
    float y;
    float z;
    char Dim;
};
struct Vector InitVector(struct Vector *);
struct Vector Add(struct Vector *,struct Vector *);
double Magnitude(struct Vector *);
float dot(struct Vector *, struct Vector *);
main()
{
    struct Vector A = {1.0, 2.0, 3.0, '3'};
    struct Vector B = {2.0, -4.0, -1.0, '3'};
    struct Vector C = InitVector(&C);
    printf("\nVector A = %4.2fi + %4.2fj + %4.2fk\n", A.x, A.y, A.z);
    printf("\nVector B = %4.2fi + %4.2fj + %4.2fk\n", B.x, B.y, B.z);
    printf("\nVector C = A+B = %4.2fi + %4.2fj + %4.2fk\n",
        A.x+B.x, A.y+B.y, A.z+B.z);
    printf("\n|A| = %4.2f, |B| = %4.2f, |C| = %4.2f\n",
        Magnitude(&A),Magnitude(&B),Magnitude(&C));
    printf("\nA dot B = %4.2f", dot(&A, &B));
    getch();
}

struct Vector InitVector(struct Vector *ZeroVector)
{
    ZeroVector->x = 0.0;
    ZeroVector->y = 0.0;
    ZeroVector->z = 0.0;
    ZeroVector->Dim = '3';
    return *ZeroVector;
}

struct Vector Add(struct Vector *X, struct Vector *Y)
{
    struct Vector Z = InitVector(&Z);
    Z.x = X->x + Y->x;
    Z.y = X->y + Y->y;
    Z.z = X->z + Y->z;
    Z.Dim = '3';
    return Z;
}

double Magnitude(struct Vector *V)
{
    double Z = sqrt(V->x*V->x +V->y*V->y + V->z*V->z);
    return Z;
}

float dot(struct Vector *X, struct Vector *Y)
{
    float Z = X->x*Y->x +X->y*Y->y + X->z*Y->z;
    return Z;
}

```

