

```
using System;
using System.Diagnostics;

using ToyBox;

namespace No003 {
    class Program003 {
        static void Main(string[] args) {
            Vector3 v1=new Vector3();
            Console.WriteLine("v1="+v1);

            Vector3 v2=new Vector3(1, 2, 3);
            Console.WriteLine("v1. Init(4, 5, 6)");
            v1. Init(4, 5, 6);
            Console.WriteLine("v1="+v1);
            Console.WriteLine("v2="+v2);
            Console.WriteLine("v1+v2="+(v1+v2));
            Console.WriteLine("v1 · v2="+Vector3.Dot(v1, v2));
            Console.WriteLine("v1xv2="+Vector3.Cross(v1, v2));
            Console.WriteLine("2*v1="+2*v1);
            Console.WriteLine("normalize(v1)="+Vector3.UnitVector(v1));
            Console.WriteLine("v1="+v1);
            Console.WriteLine("v1.Normalize()");
            v1.Normalize();
            Console.WriteLine("v1="+v1);

            // PROPERTY_XYZ を define する／しない、で
            // 速度の違いを調べてみてください。
            Stopwatch sw=new Stopwatch();
            Vector3 vec3=new Vector3();
            Random random=new Random();

            sw.Start();
            float total=0;
            for(int i=0; i<100000000; i++) {
                float x=random.Next()/(float)int.MaxValue;
                float y=random.Next()/(float)int.MaxValue;
                float z=random.Next()/(float)int.MaxValue;
                vec3. Init(x, y, z);
                vec3.Normalize();
                total+=vec3.X+vec3.Y+vec3.Z;
            }
            sw.Stop();
            Console.WriteLine("total="+total);
            Console.WriteLine("time: "+sw.ElapsedTicks);
        }
    }
}
```