

**Tasks:**

1. Use your lab01 solution(or download the solution from ssugames).
2. **(40 points)** Make the test code (below) produce the output seen in comments.
  - a. There are also some lines of code commented – if you un-comment these, they should raise the exception indicated in the comment.
  - b. Don't worry if you see "weird" decimal values (e.g. on your program, you may see -5.6000000000000001 instead of -5.6). This is normal and I will not penalize you for it.
  - c. Make sure everything from lab1 is working (if you'd like help fixing your lab1, just ask). My unit tester will use this to test your code from lab2.
3. Just like last time, this one will be graded with a unit-tester.
4. **(5 points)** Good documentation

**Sample Test Program**

```

v = VectorN(4, 7, -3)
w = VectorN(2, 0, 6)
q = VectorN(5, 9, -12)
p = VectorN(0, 0, 0, 0, 0, 0)
print(v + w)
print(v + w + q)
#print(v + 7)
print(v - w)
#print(v - "abc")
print(v * 2)
print(3 * v)
print(v / 2)
#print(v / w)
#print(2 / v)

# Note: We'll do something like multiplication between two vectors, but there are many types of vector-vector
# "multiplication" (dot-product, cross-product, etc.). To avoid confusion, let's dis-allow vector * vector
#print(v * w)

print(-v)

print(v.magnitude())
print(v.magnitudeSquared())
print(v.normalized())
print(v.normalized().magnitude())

print(q.isZero())
print(p.isZero())

```

```

# <Vector3: 6.0, 7.0, 3.0>
# <Vector3: 11.0, 16.0, -9.0>
# ValueError: You can only add another Vector3 to this Vector3 (you passed '7').
# <Vector3: 2.0, 7.0, -9.0>
# ValueError: You can only subtract another Vector3 from this Vector3 (you passed 'abc').
# <Vector3: 8.0, 14.0, -6.0>
# <Vector3: 12.0, 21.0, -9.0>
# <Vector3: 2.0, 3.5, -1.5>
# ValueError: You can only divide this Vector3 by a scalar.
# You attempted to divide by '<Vector3: 2.0, 0.0, 6.0>'.
# TypeError: unsupported operand type(s) for /: 'int' and 'VectorN'

# ValueError: You can only multiply this Vector3 and a scalar.
# You attempted to multiply by '<Vector3: 2.0, 0.0, 6.0>'.

# <Vector3: -4.0, -7.0, 3.0>

# 8.602325267042627
# 74.0
# <Vector3: 0.46499055497527714, 0.813733471206735, -0.34874291623145787>
# 1.0

# False
# True

```