# Lab 5B –Value Returning Functions

**Falling Distance**

When an object is falling because of gravity, the following formula can be used to determine the distance the object falls in a specific time period:

*d = ½ gt2*

The variables in the formula are as follows:

d is the distance in meters

g is 9.8 (the gravitational constant)

t is the amount of time in seconds the object has been falling

Your program will calculate the distance in meters based on the object’s falling distance.

**Modularity:** Your program should contain 2 functions:

main – will call the falling\_distance function in a loop, passing it the values 1 – 10 as arguments (seconds the object has been falling). It will display the returned distance.

falling\_distance – will be passed one parameter which is the time in seconds the object has been falling and will calculate and return the distance in meters. falling\_distance should be stored in a separate file (module) called distance.py You will import distance before your main function in your original program file.

**Input Validation:** None needed

**Output:** Should look like this:

Time Falling Distance

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1 4.90

2 19.60

3 44.10

4 78.40

5 122.50

6 176.40

7 240.10

8 313.60

9 396.90

10 490.00

**Programming Style Requirements.**

* Comments – Begin your program with a comment that includes: a) your name, b)program status – either “Complete” or describe any incomplete or non-functioning part of your program c)A 1-3 line description of what the program does.
* Function comments – each function should begin with a comment explaining what the function does
* Variable names – use meaningful variable names such as total\_taxes or num\_cookies.
* Function names – use meaningful verb names for functions such as display\_taxes.
* Named constants – Use named constants for all number values that will not be changed in the program such as RECIPE\_SUGAR = 1.5. See section 2.9 on Named Constants

Your program file: *yourlastname*\_Lab5B.py

Your distance module: *distance.py*