04.1 - Falling

When an object begins falling due to gravity, the distance the object falls in a given time t can be found as

$$d = 1/2gt^2$$

where d is the distance in meters, g is the gravitational force, and t is the time in seconds.

Write a function named `falling_dist` that accepts an object's falling time (in seconds) as an argument, and then calculates and returns the distance in meters that the object will fall during that time. Assume that the gravitational force is constant at $8.87\,\mathrm{m/s}$ (mean surface gravity of Venus). Make sure to define this function outside of your `main` function.

Then, inside of your `main` function, write a loop to iterate through time values from $5\,\mathrm{s}$ to $50\,\mathrm{s}$ in $5\,\mathrm{s}$ increments. Inside this loop, call your `falling_dist` function to calculate the falling distance at each time. Finally, format the results as shown in the table below, using the data in Table 1 to verify that your program is working.

Your output should exactly match the sample output, character for character, including all white space and punctuation. User input in the sample has been highlighted in Pappy's Purple to distinguish it from the program's output, but your user input does not need to be colored. Save your program as `falling_login.py`, where `login` is your Purdue login. Then submit it along with a screenshot showing a run of your program.

Output	
Time (s)	Distance (m)
5	110.9
10	443.5
15	997.9
20	1774.0
25	2771.9
30	3991.5
35	5432.9
40	7096.0
45	8980.9
50	11087.5

Table 1: Falling distance test data.

Terminal

```
$ python falling_login.py
Time (s)  Distance (m)
----------------------
       5         110.9
      10         443.5
      15         997.9
      20        1774.0
      25        2771.9
      30        3991.5
      35        5432.9
      40        7096.0
      45        8980.9
      50       11087.5
```