

**Topic: user-defined functions**  
**CS 150 Introduction To CS**  
**Python - Worksheet 03**  
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Give the output of the following programs:

1.

```
def doublingTime(x):  
    time = 72 / x  
    return time  
  
def main():  
    p = float(input("Enter the population growth as a percent: "))  
    print("The population will double ", end='')  
    print("in about {0:.2f} years.".format(doublingTime(p)))  
  
main()
```

Show output in the box below (assume user enters 2)

**Enter the population growth as a percent: 2**  
**The population will double in about 36.00 years.**

2.

```
def sentence(num, thing, where):  
    print(num, thing + "s in", where)  
  
def main():  
    sentence(168, "hour", "a week")  
    sentence(76, "trombone", "the big parade")  
  
main()
```

Show output in the box below

**168 hours in a week**  
**76 trombones in the big parade**

3.

```
name = "Fred"

def getName():
    name = "rick"
    return name

def main():
    global name
    otherName = getName()
    name += otherName
    print(name)

main()
```

SShow output in the box below

**Fredrick**

4. In Wing, write a pay-raise program that requests a person's first name, last name, and current annual salary, and then displays the person's salary for next year assuming they will get a 5% raise. Use functions for input, output, and a function to calculate the new salary. The program should work for any input values. Do not use any global variables. For example, you may have the following functions: (Hint: .... means you will need parameters)

- getFirstName()
- getLastName()
- getCurrentSalary()
- calculateNewSalary(....)
- displayResults(....)
- main()

Sample Run (user input shown in bold) – format exactly like this output

```
Enter first name: John
Enter last name: Doe
Enter current salary: 48000
New salary for John Doe: $50,400.00
```

**Python File!**