

Exercise Solutions

Hello, World and Variables

```
>>> x = 5 % 3
>>> x = x + 5
>>> x = x - 6
>>> x = x**2
>>> print(x)
```

```
x=5%3          // x = 2
x=x+5          // x = 7
x=x-6          // x = 1
x=x**2         // x = 1
print(x)       // x = 1
```

```
>>> x = 7
>>> y = 9
>>> x = y % x
>>> y = y + x
>>> z = y / x
>>> print(z)
```

```
x=7
y=9
x=9%7          // x=2
y=9+2          // y=11
z=11/2         // z=5.5
```

Use variables to store each of your names (first, middle, and last) and print them out in the following orders:

- First, Middle, Last
- Last, First, Middle
- Middle, First, Last

```
f="First"
m="Middle"
```

```
l="Last"
print(f,m,l)      // (f,m,l), (l,f,m), (m,f,l)
```

Find and print the slope for the lines created by each pair of coordinates . Remember the

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

- a. (1, 4), (2, 6)
- b. (5, 10), (3, 12)
- c. (34.5, 65.2), (81.6, 19.1)

```
y2=6
y1=4
x2=2
x1=1
slope=(y2-y1)/(x2-x1)      // slope=(6-4)/(2-1)
print(slope)                // 2.0
```

Text Input and Conditionals

```
month=input("Month of birth: ")
month=str(month)
day=input("Day of birth: ")
day=int(day)

if ((month=="December" and (day>=22 and day<=30)) or (month=="January" and (day>=1 and
day<=19))):
    print("Capricorn")
if ((month=="January" and (day>=20 and day<=31)) or (month=="February" and (day>=1 and
day<=18))):
    print("Sagittarius")
if ((month=="February" and (day>=19 and day<=29)) or (month=="March" and (day>=1 and
day<=20))):
    print("Pisces")
if ((month=="March" and (day>=21 and day<=31)) or (month=="April" and (day>=1 and day<=19))):
    print("Aries")
if ((month=="April" and (day>=20 and day<=31)) or (month=="May" and (day>=1 and day<=20))):
    print("Taurus")
if ((month=="May" and (day>=21 and day<=31)) or (month=="June" and (day>=1 and day<=20))):
    print("Gemini")
if ((month=="June" and (day>=21 and day<=30)) or (month=="July" and (day>=1 and day<=22))):
    print("Cancer")
if ((month=="July" and (day>=23 and day<=31)) or (month=="August" and (day>=1 and day<=22))):
    print("Leo")
if ((month=="August" and (day>=23 and day<=31)) or (month=="September" and (day>=1 and
day<=22))):
    print("Virgo")
if ((month=="September" and (day>=23 and day<=30)) or (month=="October" and (day>=1 and
day<=22))):
    print("Libra")
```

```

if ((month=="October" and (day>=23 and day<=31)) or (month=="November" and (day>=1 and
day<=21))):
    print("Scorpio")

```

Loops and Flags

1.)

```

count=99
while(count>0):
    num=str(count)
    nextNum=str(count-1)
    print(num + " bottle(s) of beer on the wall, " + num + "
bottle(s) of beer! Take one down, pass it around, "
+ nextNum + " bottles of beer on the wall!")
    count=count-1

```

2.)

```

name=str(input("Enter your name: "))
checkName=str(input("What is your name? "))
while(name!=checkName):
    checkName=str(input("Incorrect name. Please re-enter your name. "))
print(checkName + " is the correct name.")

```

Functions

1.)

```

def PythagoreanTheorem(a,b):
    c=((a**2)+(b**2))**(1/2)
    print("Hypoteneuse: " + str(c))

```

```

s1=input("Side 1: ")
s1=float(s1)
s2=input("Side 2: ")
s2=float(s2)

```

```

PythagoreanTheorem(s1,s2)

```

2.)

```

def printInfo(n,a):

```

```
    print(n + " is " + str(a) + " years old.")

name=input("Name: ")
age=input("Age: ")

printInfo(name,age)
```

3.)

```
PIZZA=9
SANDWICH=6
MACARONI=4

def totalCost(p,s,m):
    sum=(p*PIZZA)+(s*SANDWICH)+(m*MACARONI)
    print("Total cost: $" + str(sum))

numP=int(input("How many orders of pizza? "))
numS=int(input("How many orders of sandwiches? "))
numM=int(input("How many orders of macaroni and cheese? "))

totalCost(numP,numS,numM)
```