

(1)  
Find max and min number from three integer numbers using conditional statements.  
Also, use `input().split()` for the user inputs

```
Please input three numbers: 9 13 2
MAX: 13
MIN: 2
```

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(2)

- **Make a program that determines if given lengths of three line segments can make a triangle or not.**
- **Input format**  
`L1 L2 L3`
- **Output format**  
`Yes/No`

```
Please input lengths of three line segments: 3 4 5 (enter)
Yes
Please input lengths of three line segments: 3 14 5 (enter)
No
```

---

(3)

**When `n` is given by a user input, make a program that displays asterisks like shown below using a *nested for loop* and `print("*", end="")`**

```
Please input a number? 7 (enter)
*
**
***
****
*****
*****
*****
*****
```

---

(4)

**When `n` is given by a user input, make a program that displays asterisks like shown below using a *nested* `for` loop and `print("*", end="")`**

Please input a number? 7 (enter)

```
*
**
***
****
*****
*****
*****
```

---

(5)

**When `n` is given by a user input, make a program that displays asterisks like shown below using a *nested* `for` loop and `print("*", end="")`**

Please input a number? 7 (enter)

```
*****
*****
*****
****
***
**
*
```

---

(6)

**When `n` is given by a user input, make a program that displays asterisks like shown below using a *nested* `for` loop and `print("*", end="")`**

Please input a number? 5 (enter)

```

  *
  ***
 *****
*****
```

---

(7)

**When  $n$  is given by a user input, make a program that displays a multiplication table like shown below using a *nested for loop*.**

Please input a number? 5 (enter)

```
1 2 3 4 5
2 4 6 8 10
3 6 9 12 15
4 8 12 16 20
5 10 15 20 25
```

---

(8)

**Develop a rock-paper-scissors game. Please note that the program allows player to repeat the game using a *while loop*.**

Start Game

```
1. Rock
2. Paper
3. Scissors
```

What do you want to throw? 3 (enter)

Computer:Paper vs You:Scissors

You win!!!

Do you want to play again(y/n)? y

```
1. Rock
2. Paper
3. Scissors
```

What do you want to throw? 2 (enter)

Computer:Rock vs You:Paper

You win!!!

Do you want to play again(y/n)? n

Thank you!!!

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(9)

**John goes to a bakery to buy cookies and tries to calculate the shortfall if the current money is not enough. The price of one cookie is  $\kappa$ , the number of cookies to buy is  $n$ , and the current amount of money is  $m$ . If he calculates the shortfall ( $s$ ), his mother will pay the money (shortfall).**

**For example, the price of one cookie is \$3, the number of cookies bought is 4, When he has \$10, the money he needs is \$2. If the price of one cookie is \$2.50, the number of cookies to buy is 2, and he has \$1.50, the money that his mother has to pay is \$3.50. If the price of one cookie is \$0.20, the number of sweets to buy is 6, and he has \$1.50, the money he needs from his mother is \$0.**

Input & Output Format

T= the number of test case  
K= the price of one cookie  
N= the number of cookie  
M= the amount of money John has  
S= the amount of money he will ask his mother to pay  
(K, N, and M are non-negative)

## Input

T

K N M

## Output

S

### Example

#### Input

```
3
30.00 4 100.00
2.50 2 1.40
2.00 6 12.00
```

#### Output

```
20.00
3.60
0.00
```

---

(10)

**Define a function that converts US Dollar to Mexico Peso.**

**The function gets a double value as an argument (dollar)**

**The function returns a double value (Peso) after a conversion.**

**After defining the function, call the function and display the result of the conversion. The user inputs a US dollar value using `input()`.**

**Use Today's exchange rate.**

For example,

US Dollar: \$100.00 (enter)

Mexico Peso: \$ 1907.48

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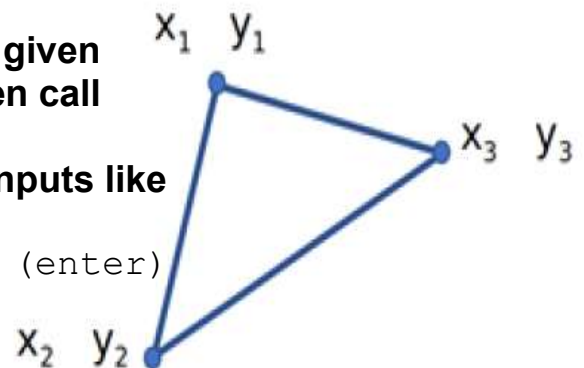
(11)

**Make a function that returns the area of a triangle given three points of the triangle as parameters, and then call the function with test values**

**(6 arguments, x1, y1, x2, y2, x3, y3) that the user inputs like below.**

Please input three points : 2 1 8 9 1 8 (enter)

The area is 25



(12)

**Define a function that has an integer argument and boolean return value. The return value indicates whether or not the argument is a prime number. The function name is prime. Implement the function and call the function with a test value that the user inputs using `input()`.**

Please input an integer: 13(enter)

13 is a prime number

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(13)

**Make a program to find the area of a rectangle that covers M circles. The rectangle has only vertical and horizontal edges. The rectangle size should be minimized to cover the circles. The circles can be overlapped. For example, when M = 3,**

**The input and output format is as follows;**

**Input**

**M // number of circles**

**c1x c1y c1r // origin of 1st circle and its radius**

**c2x c2y c2r // origin of 2nd circle and its radius**

**...**

**cMx cMy cMr // origin of Mth circle and its radius**

**Output**

**Area of the rectangle**

**M is number of circles. Following M lines are for circles. Each line has three values for x, y coordinates (e.g. c1x and c1y) a circle's center and radius (e.g. c1r). Area in Output is the estimated rectangle area.**

**Example**

**Input:**

3

7.8 3.5 0.5

8.7 8.2 1.2

3.6 7.0 0.8

**Output:**

45.44

---

**(14)** Make a simplified roulette game. A player can bet money on ODD or EVEN. If the ODD/EVEN the player selects is same as the integer value that the program randomly generates, the player doubles the money. The player can repeat the game.

```
Balance: $100
Bet: $10
1. ODD
2. EVEN
What do you want to bet on? 1
[7] You Win!
Balance: $110
Do you want to play again? Y
Bet: $20
```

```
1. ODD
2. EVEN
What do you want to bet on? 2
[3] You Lost!
Balance: $90
Do you want to play again? N
```

(15)

This lab is to run the previous lab program 100 times using a loop, and calculate the average and standard deviation of the 100 outputs. For example,

```
Iter# 1 - 100 random integer (0~99): 5 20 34 98 ... 3 64 84
45
Iter# 2 - 100 random integer (0~99): 2 43 17 22 ... 65 75 23
52
.
.
.
Iter# 100 - 100 random integer (0~99): 7 20 7 23 ... 31 98 32
48

Average: ??.??
Std: ?.??
```

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(16)

Define a class and add its instance attributes and methods.

Define a child class of the (parent) class you defined above, then add an overridden constructor/initializer with additional instance attributes (e.g., `hasASD` in the previous example).

In the overridden initializer of the child class, call the parent's initializer.

Now, create an object of the child class, and display its instance attributes using `getattr()` method.