1. Write a function to check whether a number falls in a given range.

Ans
```
# defining function to check the range.
def testRange(n):
    if n in range(1, 5):
        print ("%.s is in the range" %.str(n))
    else:
        print("The number is outside the given range.")
#Input from the user.
num = int(input("Enter a number:"))
testRange(num)
```

Output:-

1. Enter a number: 4
   4 is in the range.

2. Enter a number: 6
   The number is outside the given range.

2. Write a program that asks the user to enter how many cards they have and print out what their hand would reduce under this rule.

Ans

```
import math;
NoOfCards = int(input("Enter how many cards existing
                       in the game:"));
roundedValue = math.floor(NoOfCards/2)
Print("Holding by half after rounded down:",
                       roundedValue)
```

o/p : Enter no of Cards Existing in the game

① 11
Holding by half after rounded down: 5

② Enter no of cards Existing in the game
12
Holding by half after rounded down: 6

3

```
num = int(input("Enter a number:"));
for i in range(num, 10):
    print(i," A")
```

o/p Enter a number:
5
5 A
6 A
7 A
8 A
9 A
10 A

4.

```
from datetime import datetime
while True:
    startTime = input("Please enter starting hour:")
    if(int(startingTime)>23):
      print("Please enter valid Start hour")
      continue
    else:
       break.
while True;
   EndingTime = input("Please enter Ending hour:")
   diff = int(EndingTime)-int(startingTime)
   if(int(EndingTime) <= int(startingTime) or
        diff<1 or diff >23):
        print("please enter valid Ending hour")
        continue
   else
      break
charges = 5.50
# convert time string to datetime.
 t1 = datetime.strptime(startingTime,"%H")
 t2 = datetime.strptime(EndingTime,"%H")
# get difference.
   diffHours = t2-t1
totalcharges = (diffHours.total_seconds()/(60*60))*
                                charges;
print("User's total Bill is $", totalCharges)
```

O/P

①

Please enter starting hour:

13

Please enter Ending hour:

22

User's total Bill is $49.5

②

Please enter starting hour:

22

Please enter Ending hour:

22

Please enter valid Ending hour

Please enter Ending hour.

23

User's total Bill is $5.5.

5.
```
import random
def dice_roll():
    return random.randint(1,6)
count = int(input("Enter the number of rolls:"))
number_of_double_dice = 0
results = [0 for x in range(13)]

for i in range(0,count):
    first = dice_roll()
    second = dice_roll()
    sum = first + second

    if(first == second):
        number_of_double_dice = numbe_of_double_dice + 1

    results[sum] = results[sum] + 1

for x in range(2,13):
#print("{0:d}-{1:d} {2:0.4f}%".format(x, results[x],
        int(results[x]/count *100))
print("Doubles-{0:d}-{1:0.6f}%".format(
    number_of_double_dice, number_of_double_dice/
                                count *100))
```

o/p
```
Enter the no. of rolls : 10000
Doubles - 1679 - 16.790000%
Enter the no. of rolls : 100
Doubles - 15 - 15.000000%
```