Q NO.1: SOLVING QUADRATIC EQUATION

In [1]:

```
import cmath

a = 1
b = 5
c = 6

d = (b**2) - (4*a*c)

solution_1 = (-b-cmath.sqrt(d))/(2*a)
solution_2 = (-b+cmath.sqrt(d))/(2*a)

if (2*a)==0:
    print("equation cannot solve as there is zero division ")

else:
    print("the solutions are ", (solution_1,solution_2))
```

```
the solutions are  ((-3+0j), (-2+0j))
```

Q NO.2: ARITHMETIC SEQUENCE OF n NUMBERS

In [2]:

```
a = int(input("enter the number "))
d = int(input("enter the number "))
n = int(input("enter the number "))

tn = a + (n-1)*d

print("the", n ,"term of the sequence is : ", tn)
```

```
enter the number 3
enter the number 6
enter the number 45
the 45 term of the sequence is :  267
```

Q NO.3: PALINDROME FUNCTION

In [3]:

```
my_str = 'aIbohPhoBiA'

my_str = my_str.casefold()

rev_str = reversed(my_str)

if list(my_str) == list(rev_str):
   print("The string is a palindrome")

else:
   print("sorry")
```

```
The string is a palindrome
```

Q NO.4: MARKS SHEET

In [2]:

```
name = str(input("enter your name "))
father_name = str(input("enter your father name "))
roll_number = eval(input("enter your roll number "))
maths = int(input("enter the marks in maths "))
islamiat = int(input("enter the marks in islamiat "))
urdu = int(input("enter your marks in urdu "))
english = int(input("enter your marks in english "))
physics = int(input("enter your marks in physics "))
total_marks = int(input("enter total marks "))
obtained_marks = (maths+islamiat+urdu+english+physics)

percentage = (obtained_marks/total_marks) * 100
print(percentage)

if percentage>=80:
    print("grade A_1")
elif percentage>=70 and percentage<80:
    print("grade A")
elif percentage>=60 and percentage<70:
    print("grade B")
elif percentage>=50 and percentage<60:
    print("grade C")
elif percentage>=45 and percentage<50:
    print("grade D")
```

```
enter your name saad saud
enter your father name saud ahmed
enter your roll number 55
enter the marks in maths 80
enter the marks in islamiat 45
enter your marks in urdu 71
enter your marks in english 75
enter your marks in physics 86
enter total marks 450
79.33333333333333
grade A
```

Q NO.5: MATRIX

In [1]:

```
for i in range(1,6):
    for j in range(1,6):
        k = i*j
        print(k, end=' ')
    print()
```

```
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
```

Q NO.6: ADDITION OF MATRICES

In [8]:

```
x = [[12,7,3],
    [4,5,6],
    [7,8,9]]

y = [[5,8,1],
    [6,7,3],
    [4,5,9]]

result = [[0,0,0],
          [0,0,0],
          [0,0,0]]

for i in range(len(x)):
```

```
    for j in range(len(x[0])):
        result[i][j] = x[i][j] + y[i][j]

for r in result:
    print(r)
```

```
[17, 15, 4]
[10, 12, 9]
[11, 13, 18]
```

Q NO.7: MULTIPLICATION OF MATRICES

In [9]:

```
x = [[12,7,3],
     [4 ,5,6],
     [7 ,8,9]]

y = [[5,8,1,2],
     [6,7,3,0],
     [4,5,9,1]]

result = [[0,0,0,0],
          [0,0,0,0],
          [0,0,0,0]]

for i in range(len(x)):

   for j in range(len(y[0])):

       for k in range(len(y)):
           result[i][j] += x[i][k] * y[k][j]

for r in result:
   print(r)
```

```
[114, 160, 60, 27]
[74, 97, 73, 14]
[119, 157, 112, 23]
```