Q4. Solve the following system of three equations in three unknown:

$x^2 + y^2 = 1$
$xy + yz = -1.1$
$y^2 + z^2 = 2$
A reasonsable guess for all variables is $x = y = z = 2$.

In [20]:

```
def f(xyz):
    x=xyz[0]
    y=xyz[1]
    z=xyz[2]

    f0=x**2+y**2-1
    f1=x*y+y*z+1.1
    f2=y**2+z**2-2

    return np.array([f0,f1,f1])

xyz0 = np.array([2.0,2,2])
xyz0
```

Out[20]:

```
array([2., 2., 2.])
```

10th September

- Sequence

In [2]:

```
from sympy import SeqFormula, Symbol
n=Symbol('n')
s=SeqFormula(n**2,(n,0,5))
s.formula
```

Out[2]:

n^2

In [3]:

```
s.coeff(3)
```

Out[3]:

9

supports slicing

In [5]:

```
1 s[:]
```

Out[5]:

```
[0, 1, 4, 9, 16, 25]
```

In [6]:

```
1 s[1:4]
```

Out[6]:

```
[1, 4, 9]
```

Sequence elements are displayed using list() command

In [21]:

```
1 list(s)
```

Out[21]:

```
[0, 1, 4, 9, 16, 25]
```

Lets discuss on few types of sequence in python

1)Strings

A string is a group of characters

To declare an empty, use function str()

- declare a string

In [24]:

```
1 name=str('Ann')
2 name
```

Out[24]:

```
'Ann'
```

- Access a letter from the string

In [25]:

```
1 name[2]
```

Out[25]:

```
'n'
```

2)Lists

A list is an ordered group of items. To declare it,we use square brackets.

Declare a list

In [26]:

```
groceries=['milk','bread','eggs']
groceries
```

Out[26]:

```
['milk', 'bread', 'eggs']
```

- Accessa element in the list

In [27]:

```
groceries[2]
```

Out[27]:

```
'eggs'
```

In [30]:

```
#slicing is possible
groceries[:2]
```

Out[30]:

```
['milk', 'bread']
```

Python list can hold all kinda ofitems,this is what makes it heteregoneous.

In [29]:

```
mylist=[1,'2',3.0,False]
mylist
#List is mutable we can change a value.
```

Out[29]:

```
[1, '2', 3.0, False]
```

3)Tuples

- A tuple is an immutable group of item.
- we cant change a single value once we declare it.

-Declare a tuple

In [32]:

```
name=('Arushi','Kiran')
name
```

Out[32]:

```
('Arushi', 'Kiran')
```

We can also use the function tuple()

4)Range

A range()object lends us a range to iterate on;it gives us a list of numbers.

Syntax: range(start,stop,step)

In [34]:

```
for i in range(10,0,-3):
    print(i)
```

```
10
7
4
1
```

13th September

In [ ]:

```

```