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CDS 292

Assignment 1

Imports

In [4]:

```
import math
```

Question 1

In [5]:

```
one = int(input())
print("ONE:",one);
one_sq = one ** 2;
print("ONE_SQ:",one_sq);
one_plus = one + (27 * 13 ** 2);
print("ONE_PLUS:",one_plus);
one_float = float(one_plus)
print("ONE_FLOAT:",one_float);
```

```
ONE: 55
ONE_SQ: 3025
ONE_PLUS: 4618
ONE_FLOAT: 4618.0
```

Question 2

In [11]:

```
two = float(input())
print("TWO:",two);
two_sq = two ** 2;
print("TWO_SQ:",two_sq);
two_plus = two + (27 * 13 ** 2);
print("TWO_PLUS:",two_plus);
two_floor = float(math.floor(two_plus));
print("TWO_FLOOR:",two_floor);
```

```
TWO: 25.2202
TWO_SQ: 636.0584880399999
TWO_PLUS: 4588.2202
TWO_FLOOR: 4588.0
```

Question 3

In [14]:

```
three = ["Riley","John","Andy","Katelyn","Pierce","Logan"];
print("THREE:",three);
three_in_order = three;
three_in_order.sort();
print("THREE_IN_ORDER:",three_in_order);
```

```
THREE: ['Riley', 'John', 'Andy', 'Katelyn', 'Pierce', 'Logan']
THREE_IN_ORDER: ['Andy', 'John', 'Katelyn', 'Logan', 'Pierce', 'Riley']
```

Question 4

In [52]:

```
four = [];
four_in = [];
for i in range(5,20):
    four.append(i ** 3);
for i in range(5,21):
    four_in.append(i ** 3);
print("FOUR (EXCLUSIVE of 20):",four);
print("FOUR (INCLUSIVE of 5 and 20):",four_in);
```

```
FOUR (EXCLUSIVE of 20): [125, 216, 343, 512, 729, 1000, 1331, 1728, 2197, 274
4, 3375, 4096, 4913, 5832, 6859]
FOUR (INCLUSIVE of 5 and 20): [125, 216, 343, 512, 729, 1000, 1331, 1728, 219
7, 2744, 3375, 4096, 4913, 5832, 6859, 8000]
```

Question 5

In [58]:

```
def fx(x):
    return ((x+2) / (x ** 2));
five = [];
for i in range(1,51):
    five.append(fx(i));
print("FIVE:",five)
```

```
FIVE: [3.0, 1.0, 0.5555555555555556, 0.375, 0.28, 0.2222222222222222, 0.18367
34693877551, 0.15625, 0.13580246913580246, 0.12, 0.10743801652892562, 0.09722
222222222222, 0.08875739644970414, 0.08163265306122448, 0.07555555555555556,
0.0703125, 0.0657439446366782, 0.06172839506172839, 0.05817174515235457, 0.05
5, 0.05215419501133787, 0.049586776859504134, 0.04725897920604915, 0.04513888
888888889, 0.0432, 0.04142011834319527, 0.039780521262002745, 0.0382653061224
4898, 0.036860879904875146, 0.035555555555555556, 0.03433922996878252, 0.0332
03125, 0.03213957759412305, 0.031141868512110725, 0.030204081632653063, 0.029
320987654320986, 0.028487947406866325, 0.027700831024930747, 0.02695595003287
311, 0.02625, 0.02558001189767995, 0.024943310657596373, 0.02433747971876690
2, 0.023760330578512397, 0.023209876543209877, 0.022684310018903593, 0.022181
982797645994, 0.021701388888888888, 0.0212411495210329, 0.0208]
```

Question 6

In [56]:

```
fib = [0,1];
for i in range(2,31):
    fib.append(fib[i-2] + fib[i-1]);
six = fib[20:30]
print("SIX:",six)
fib_list = fib[22:24];
for i in range(len(fib_list)):
    fib_list[i] = (fib_list[i] ** 0.5);
print("FIB_LIST:",fib_list)
fib_sum = sum(fib_list);
print("FIB_SUM:",fib_sum);
```

```
SIX: [6765, 10946, 17711, 28657, 46368, 75025, 121393, 196418, 317811, 51422
9]
FIB_LIST: [133.08268106707197, 169.28378540191025]
FIB_SUM: 302.36646646898225
```