

Q1

```
n = int(input("Enter the limit : "))
for i in range(n):
    for j in range(n):
        for l in range(n):
            ...
            ...
            ...
            K for-loops in total
            ...
            ...
            ...
            for z in range(n):
                print("Time complexity")
```

Time Complexity is $O(n^k)$

Q2

```
n = int(input("Enter the limit : "))

def func(n):
    if n >= 1:
        func(n - 1)
    print("Time complexity")
```

Time Complexity is $O(1)$

Q3

```
n = int(input("Enter the limit : "))

i = 1
while (i ** 2 <= n):
    print("Time complexity")
    i += 1
```

Time Complexity is $O(\log n)$

Q4

```
from random import random

n = int(input("Enter the limit : "))

m = int(input("Enter the limit : ")) a = b = 0

for i in range(n):
    a = a + 1

for j in range(m):
    b = b + random()
```

Time Complexity is $O(n+m)$

Q5

```
n = int(input("Enter the limit : "))

for i in range(n):
    for j in range(i):
        for k in range(100):
            print("Time Complexity")
```

Time Complexity is $O(n^2)$

Q6

```
n = int(input("Enter the limit : "))
for i in range(n):
    j = 1
    while (j <= i ** 2):
        for k in range(n / 2):
            print("Time complexity")
```

Q6 code has syntax error and when fixed will be an infinite loop.