DAA
ACTIVITY 1

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Section : CS-20
Subject : DAA

a.

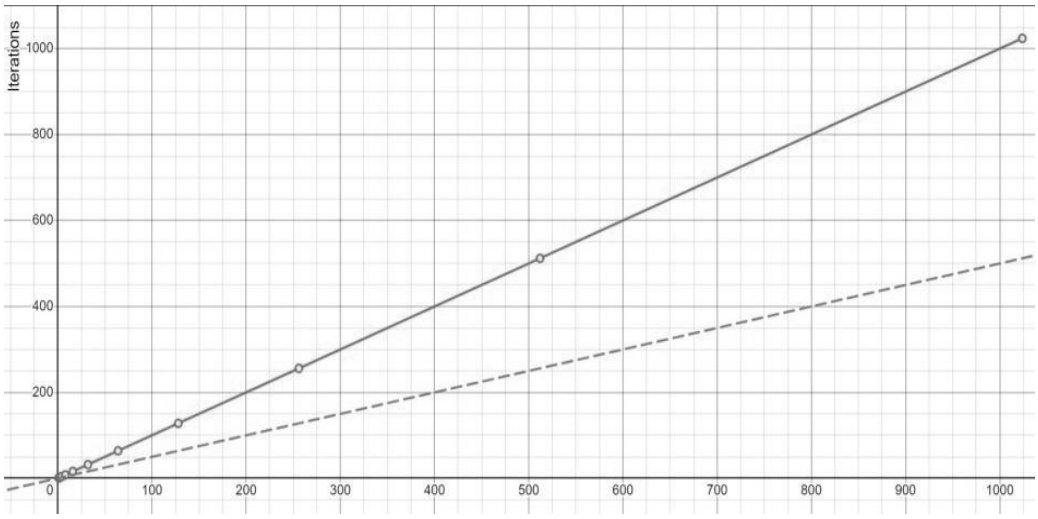
```
itr = 1
for i = 1 to N:
    print(itr);
    itr++;
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	2
4	4
8	8
16	16
32	32
64	64
128	128
256	256
512	512
1024	1024



b.

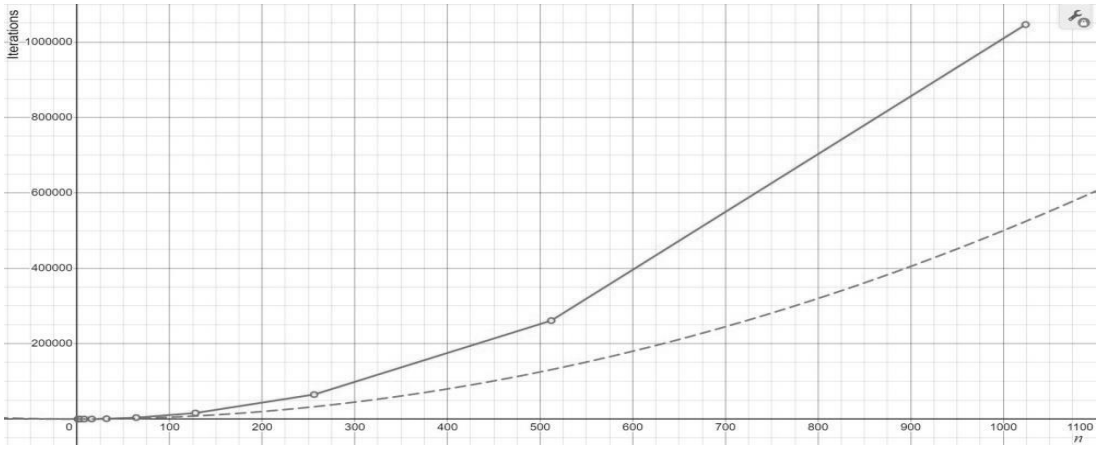
```
itr = 1
for i = 1 to N:
    for j = 1 to N:
        print(itr);
        itr++
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < n; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	2
4	10
8	50
16	226
32	962
64	3970
128	16130
256	65026
512	261122
1024	1046530



c.

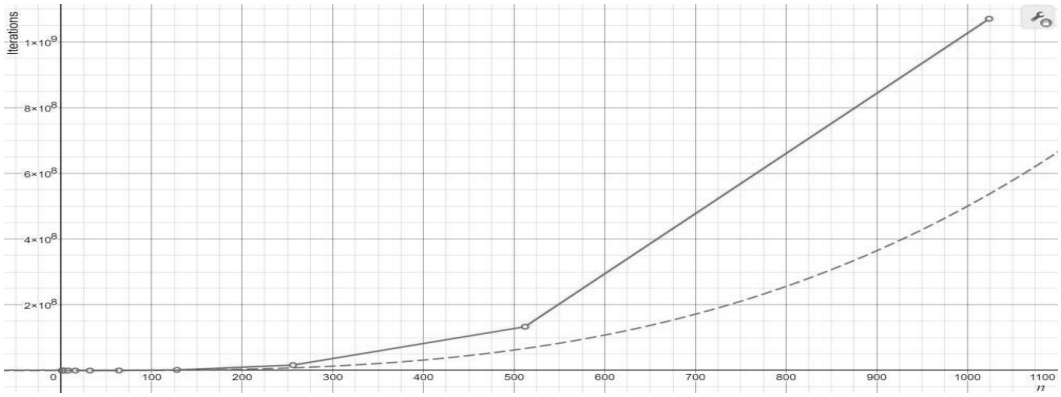
```
itr = 1
for i = 1 to N:
    for j = 1 to N:
        for k = 1 to N:
            print(itr);
            itr++
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < n; j++)
            for (int k = 1; k < n; k++)
                itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	2
4	28
8	344
16	3376
32	29792
64	250048
128	2048384
256	16581376
512	133432832
1024	1070599168



d.

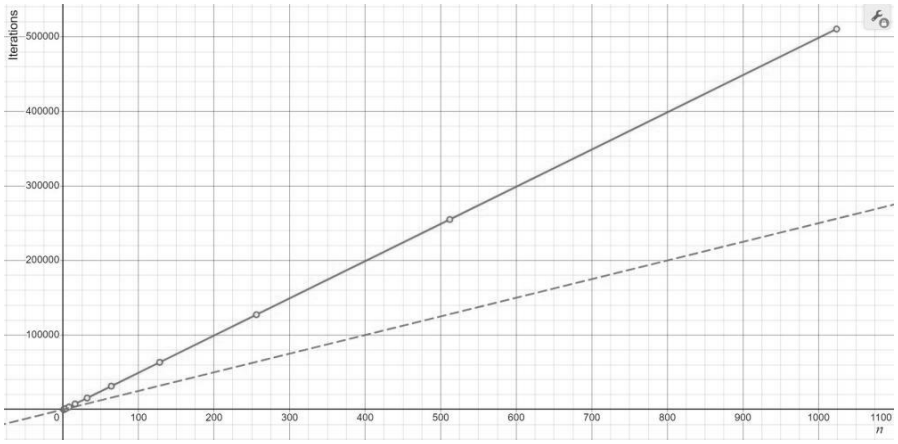
```
itr = 1
    for i = 1 to N:
        for j = 1 to k: // k is a constant
            print(itr);
            itr++;
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1, k = 500;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < k; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	500
4	1498
8	3494
16	7486
32	15470
64	31438
128	63374
256	127246
512	254990
1024	510478



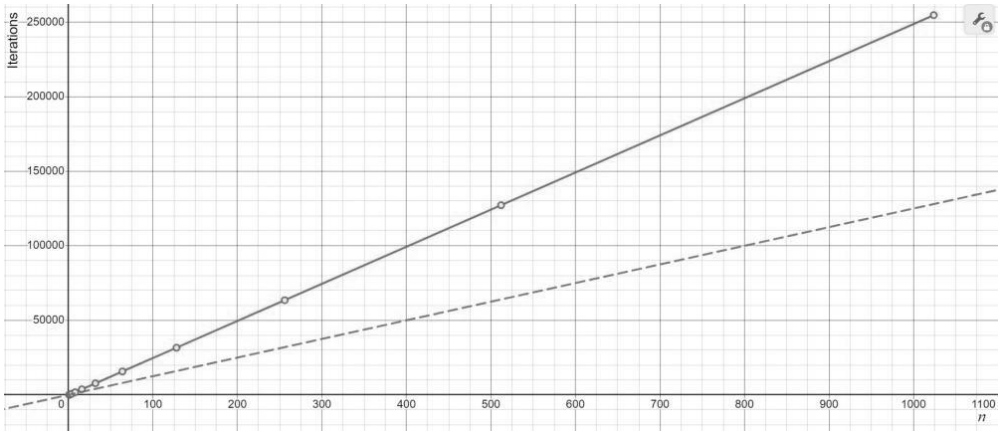
```
e.  itr = 1
    for i = 1 to N:
        for j = 1 to k/2: // k is a constant
            print(itr);
            itr++;
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1, k = 500;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < k / 2; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	250
4	748
8	1744
16	3736
32	7720
64	15688
128	31624
256	63496
512	127240
1024	254728



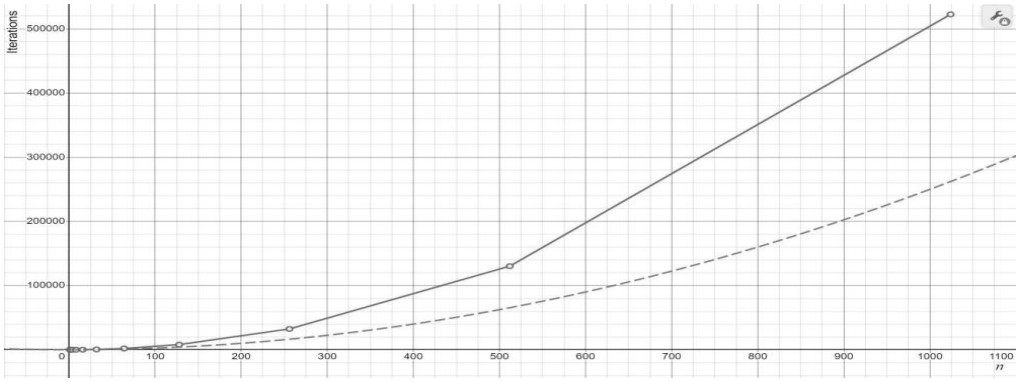
```
f.    itr = 1
      for i = 1 to N:
          for j = 1 to N/2:
              print(itr);
              itr++;
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < n / 2; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	1
4	4
8	22
16	106
32	466
64	1954
128	8002
256	32386
512	130306
1024	522754



G.

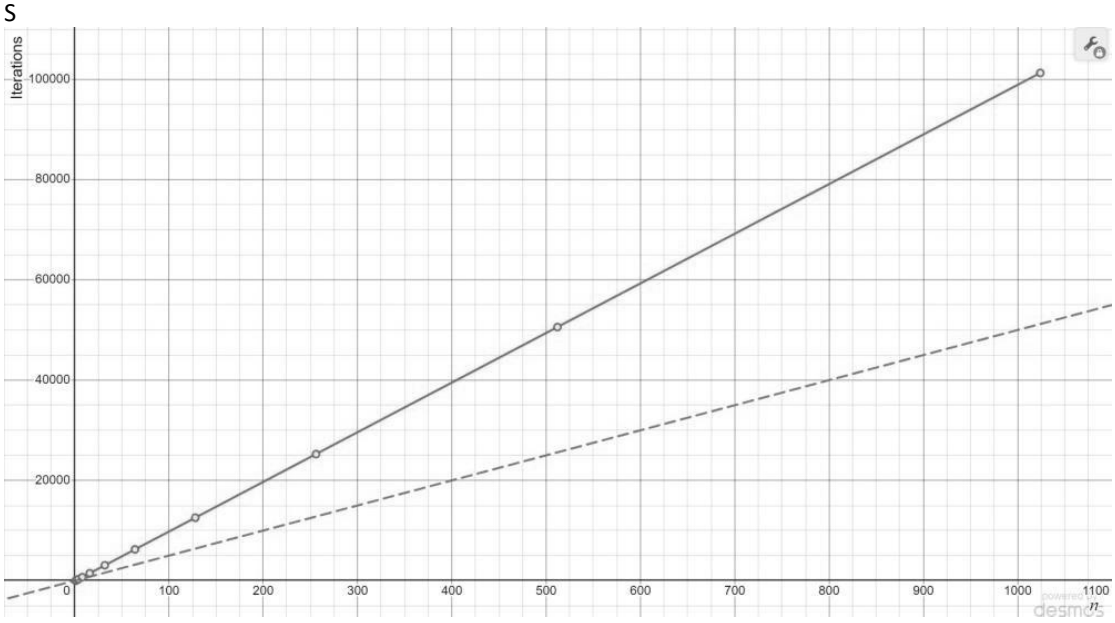
```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < 100; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	100
4	298
8	694
16	1486
32	3070
64	6238
128	12574
256	25246
512	50590
1024	101278

S



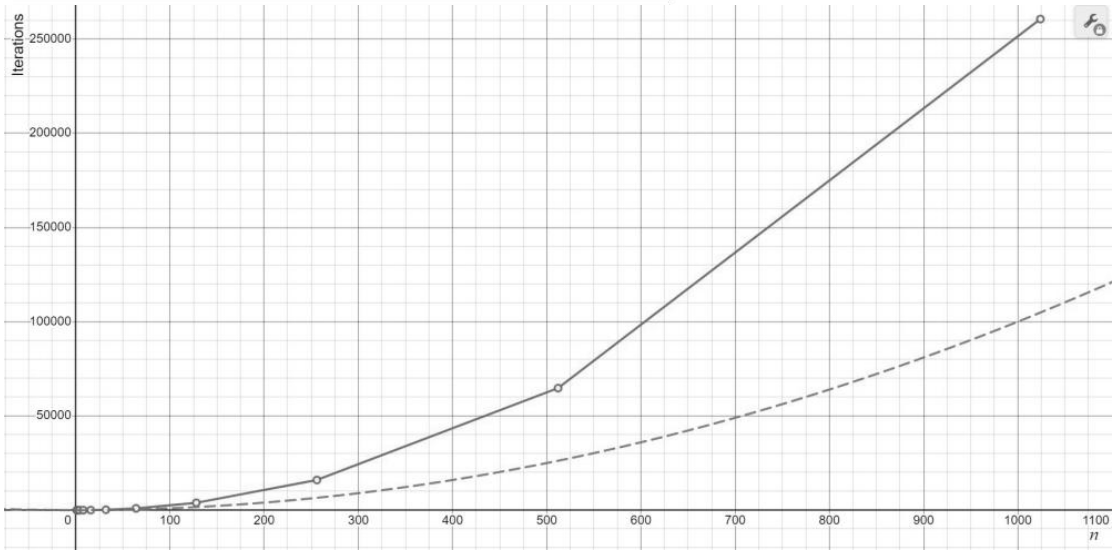
H.

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < i / 2; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	1
4	1
8	7
16	43
32	211
64	931
128	3907
256	16003
512	64771
1024	260611



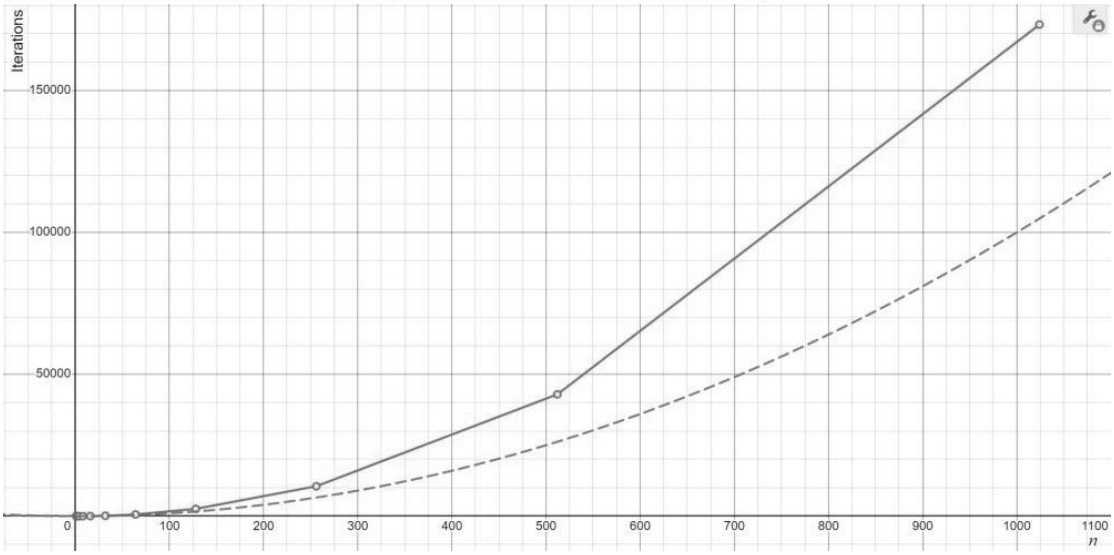
```
i. itr = 1
    for i = 1 to N:
        for j = 1 to i/3:
            print(itr)
            itr++
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < i / 3; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	1
4	1
8	3
16	23
32	127
64	591
128	2543
256	10543
512	42927
1024	173231



```
j .  itr = 1
       for i = 1 to N:
             for j = 1 to i:
                   print(itr)
                   itr++
```

```c
#include <stdio.h>

int func(int n)
{
    int itr = 1;
    for (int i = 1; i < n; i++)
        for (int j = 1; j < i; j++)
            itr++;
    return itr;
}

int main()
{
    int n = 1;
    printf("n \t itr\n");
    while (n <= 1024)
    {
        printf("%d \t %d\n", n, func(n));
        n *= 2;
    }
    return 0;
}
```

N	Itr
1	1
2	1
4	4
8	22
16	106
32	466
64	1954
128	8002
256	32386
512	130306
1024	522754