Suin Kim
CS260-003
Professor Mark W. Boady

Lab 4

Scribe: Suin Kim

Question 1:

a. 1

b. 3

c. 6

d. 10

e. 15

f. 21

g. 28

h. 36

i. 45

Question 2:

a. $\sum_{k=2}^{5} k = 2 + 3 + 4 + 5 = 14$

b. $\sum_{k=1}^{4} k^2 = 1^2 + 2^2 + 3^2 + 4^2 = 30$

Question 3:

a. $\sum_{k=1}^{n} 2k$

b. $\sum_{k=1}^{n} 2k - 1$

c.

function A(n)

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```
        k=1

        total = 0

        while k ≤ n do

            total = total + 3k + 1

            k = k + 1

        end while

        return total

    end function
```

Question 4:

a. 2
b. 6
c. 12
d. 20
e. $b(n) = n^2 - n$

Question 5:

a. 1
b. 3
c. 6
d. 10
e. $b(n) = \frac{1}{2}(n^2 - n)$

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Question 6:

a. 12

b. 32

c. 80

d. 192

e. $M(n) = nlog_2(n) + n$