Nested loops when each nested loop begins at the current value of the enclosing loop's loop index:

```
int x = 0;                                          O(1)
for (int a = 0; a < n; a++)                         int a = 0:  O(1);
                                                    a < n:      O(N + 1);
                                                    a++:        O(N)
                                                    jump to loop start:     O(N)
{
      x += a;                                       O(N)
      for (int b = a; b < n; b++)                   int b = a:  O(N);
                                                    b < n:      O(N(N+1)/2 + N);
                                                    b++:        O(N(N+1)/2)
                                                    jump to loop start:     O(N(N+1)/2)
      {
            x += b;                                 O(N(N+1)/2)
            for (int c = b; c < n; c++)             int c = b:  O(N(N+1)/2);
                                                    c < n:      O(N(N+1)(N+2)/6) + N(N+1)/2);
                                                    c++:        O(N(N+1)(N+2)/6)
                                                    jump to loop start:     O(N(N+1)(N+2)/6)
            {
                  x += c;                           O(N(N+1)(N+2)/6)
                  for (int d = c; d < n; d++)       int d = c:  O(N(N+1)(N+2)/6)
                                                    d < n:      O(N(N+1)(N+2)(N+3)/24 +
                                                                      N(N+1)(N+2)/6)
                                                    d++:        O(N(N+1)(N+2)(N+3)/24)
                                                    jump to loop start:
                                                          O(N(N+1)(N+2)(N+3)/24)
                  {
                        x += d                      O(N(N+1)(N+2)(N+3)/24)
                  }
            }
      }
}
```

An example of the above loops where each loop begins at 0 and iterates to N – 1 is shown on the next page.

Nested loops when each nested loop begins at 0 and iterates from 0 to N - 1:

```
int x = 0;                                          O(1)
for (int a = 0; a < n; a++)                         int a = 0:  O(1);
                                                    a < n:      O(N + 1);
                                                    a++:        O(N)
                                                    jump to loop start:     O(N)
{
      x += a;                                       O(N)
      for (int b = 0; b < n; b++)                   int b = a:  O(N);
                                                    b < n:      O(N^2 + N);
                                                    b++:        O(N^2)
                                                    jump to loop start:     O(N^2)
      {
            x += b;                                 O(N^2)
            for (int c = 0; c < n; c++)             int c = b:  O(N^2);
                                                    c < n:      O(N^3 + N^2);
                                                    c++:        O(N^3)
                                                    jump to loop start:     O(N^3)
            {
                  x += c;                           O(N^3)
                  for (int d = 0; d < n; d++)       int d = c:  O(N^3)
                                                    d < n:      O(N^4) + O(N^3)
                                                    d++:        O(N^4)
                                                    jump to loop start:     O(N^4)
                  {
                        x += d                      O(N^4)
                  }
            }
      }
}
```