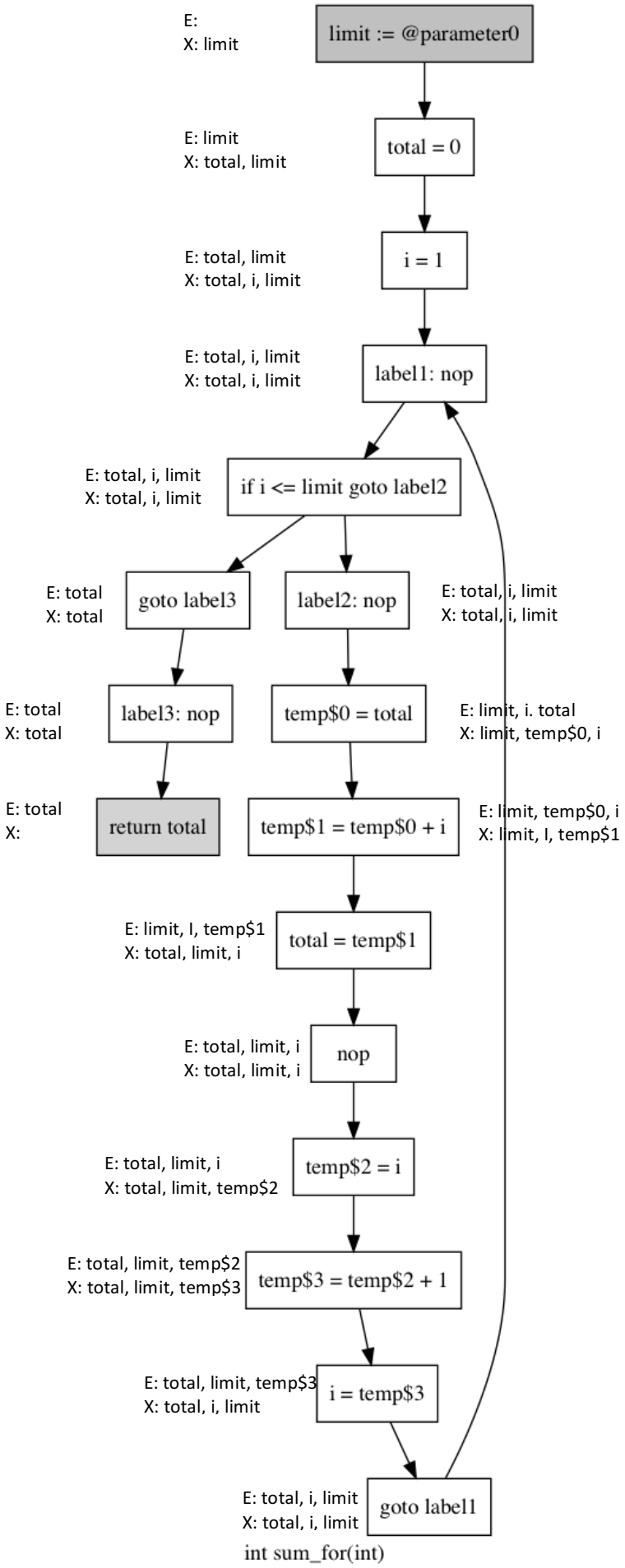
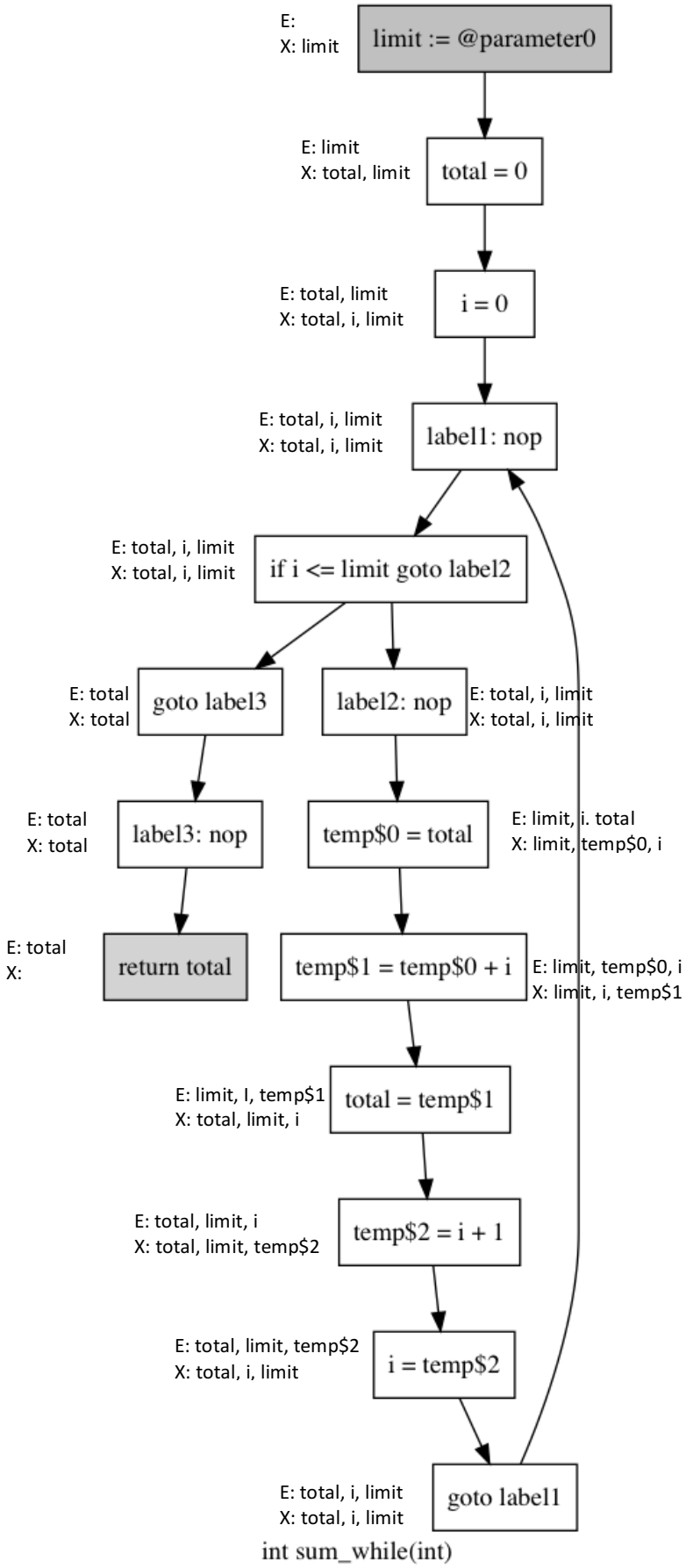
```java
/***
 * Sum using for loop
 * @param limit: Limit to sum until
 * @return Sum until limit
 */
public static int sum_for(int limit){
   int total = 0;
   for(int i=1; i<=limit; i++) {
      total += i;
   }
   return total;
}
```

```
public static int sum_for(int)
{
    int limit, total, i, temp$0, temp$1, temp$2,
temp$3;

    limit := @parameter0: int;

    total = 0;

    i = 1;

 label1:
    nop;

    if i <= limit goto label2;

    goto label3;

 label2:
    nop;

    temp$0 = total;

    temp$1 = temp$0 + i;

    total = temp$1;

    nop;

    temp$2 = i;

    temp$3 = temp$2 + 1;

    i = temp$3;

    goto label1;

 label3:
    nop;

    return total;
}
```



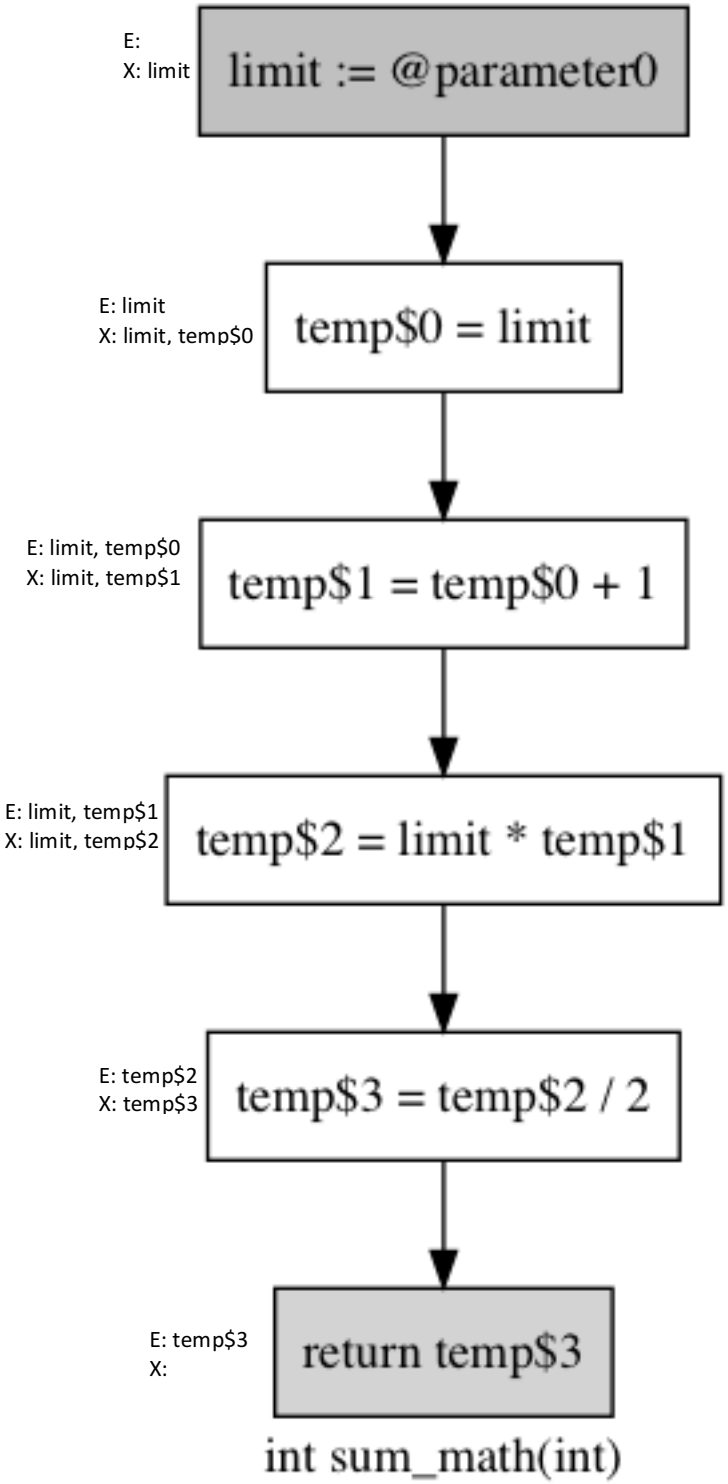
```java
/***
 * Sum using while loop
 * @param limit: Limit to sum until
 * @return Sum until limit
 */
public static int sum_while(int limit) {
   int total = 0, i = 0;
   while(i <= limit){
      total += i;
      ++i;
   }
   return total;
}
```

```
public static int sum_while(int)
{
    int limit, total, i, temp$0, temp$1, temp$2;

    limit := @parameter0: int;

    total = 0;

    i = 0;

 label1:
    nop;

    if i <= limit goto label2;

    goto label3;

 label2:
    nop;

    temp$0 = total;

    temp$1 = temp$0 + i;

    total = temp$1;

    temp$2 = i + 1;

    i = temp$2;

    goto label1;

 label3:
    nop;

    return total;
}
```



```java
/***
 * Sum using mathematical formula
 * @param limit: Limit to sum until
 * @return Sum until limit
 */
public static int sum_math(int limit) {
   return limit * (limit +  1) / 2;
}
```

```
public static int sum_math(int)
{
    int limit, temp$0, temp$1, temp$2, temp$3;

    limit := @parameter0: int;

    temp$0 = limit;

    temp$1 = temp$0 + 1;

    temp$2 = limit * temp$1;

    temp$3 = temp$2 / 2;

    return temp$3;
}
```



```java
public static int something_different(int x) {
   int y, z;
   while (x > 2) {
      y = x/2;
      if (y > 3) x = x - y;
      z = x - 4;
      if (z > 0) x = x/2;
      z = z - 1;
   }
   return x;
}
```

```
public static int something_different(int)
{
    int x, y, z, temp$0, temp$1, temp$2, temp$3,
temp$4;
    x := @parameter0: int;

 label1:
    nop;
    if x > 2 goto label2;
    goto label7;

 label2:
    nop;
    temp$0 = x / 2;
    y = temp$0;
    if y > 3 goto label3;
    goto label4;

 label3:
    nop;
    temp$1 = x - y;
    x = temp$1;

 label4:
    nop;
    temp$2 = x - 4;
    z = temp$2;
    if z > 0 goto label5;
    goto label6;

 label5:
    nop;
    temp$3 = x / 2;
    x = temp$3;

 label6:
    nop;
    temp$4 = z - 1;
    z = temp$4;
    goto label1;

 label7:
    nop;
    return x;
}
```