(a)

```
void D(int x[], int n)
{
  for (int i = 0; i < n; i += 2) {
    count++; //for the for
    x[i] += 2;
    count++; //for assignment
    }
  count++; //last time of for
  int i = 1;
  count++;
  while (i <= n/2) {
     count++; //for while
     x[i] += x[i+1];
     count++;
     i++;
     count++;}
  count++; //last time of while
}
```

Relevant files are `dcount1.*`

(b) Simplified version

```
void D(int x[], int n)
{
  for (int i = 0; i < n; i += 2)
    count += 2;
  count += 2;
  int i = 1;
  while (i <= n/2) {
     count += 3;
     i++;}
  count++; //last time of while
}
```

Relevant files are `dcount2.*`

(c) In the `for` loop, `count` is increased by $2\lceil n/2 \rceil$ and in the `while` loop it is increased by $3\lfloor n/2 \rfloor$. So, on termination, `count` equals $3 + 2\lceil n/2 \rceil + 3\lfloor n/2 \rfloor$.

(d)

Statement	s/e	Frequency	Total Steps
void D(int x[], int n)	0	0	0
{	0	0	0
for (int i = 0; i < n; i += 2)	1	$\lceil n/2 \rceil + 1$	$\lceil n/2 \rceil + 1$
x[i] += 2;	1	$\lceil n/2 \rceil$	$\lceil n/2 \rceil$
int i = 1;	1	1	1
while (i <= n/2) {	1	$\lfloor n/2 \rfloor + 1$	$\lfloor n/2 \rfloor + 1$
x[i] += x[i+1];	1	$\lfloor n/2 \rfloor$	$\lfloor n/2 \rfloor$
i++;}	1	$\lfloor n/2 \rfloor$	$\lfloor n/2 \rfloor$
}			
Total			$2\lceil n/2 \rceil + 3\lfloor n/2 \rfloor + 3$