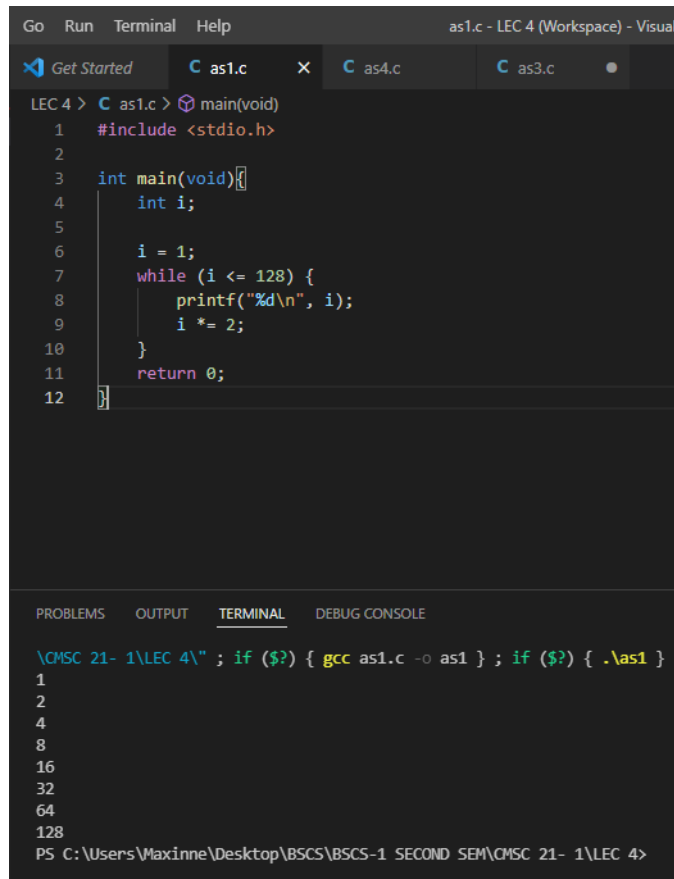


Loop/Repetition Statements

Lecture 4 Assignments

1.



```
Go Run Terminal Help as1.c - LEC 4 (Workspace) - Visual
Get Started C as1.c x C as4.c C as3.c
LEC 4 > C as1.c > main(void)
1  #include <stdio.h>
2
3  int main(void){
4      int i;
5
6      i = 1;
7      while (i <= 128) {
8          printf("%d\n", i);
9          i *= 2;
10     }
11     return 0;
12 }
```

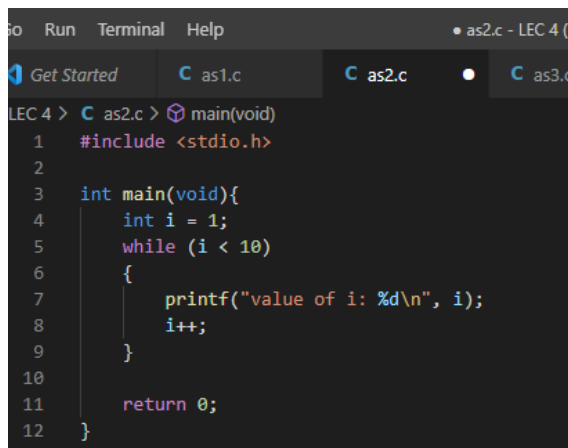
```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
\\CMSC 21- 1\\LEC 4\" ; if ($?) { gcc as1.c -o as1 } ; if ($?) { .\\as1 }
1
2
4
8
16
32
64
128
PS C:\\Users\\Maxinne\\Desktop\\BSCS\\BSCS-1 SECOND SEM\\CMSC 21- 1\\LEC 4>
```

2.

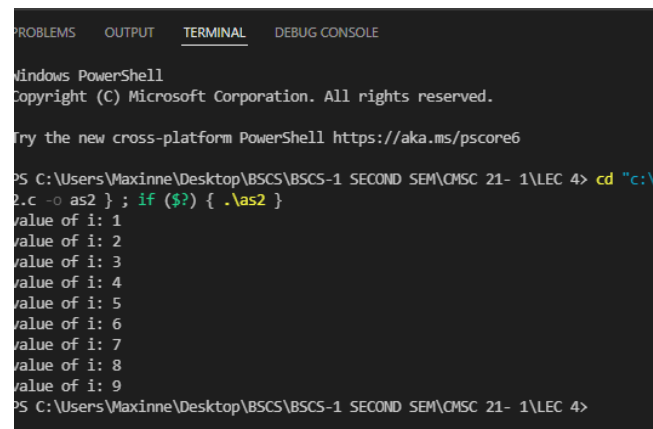
Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?

- a) while (i < 10) {...}
- b) for (; i < 10;) {...}
- c) do {...} while (i < 10);

ANS: the for loop because it is an infinite loop.



```
Go Run Terminal Help as2.c - LEC 4 (Workspace) - Visual
Get Started C as1.c C as2.c C as3.c
LEC 4 > C as2.c > main(void)
1  #include <stdio.h>
2
3  int main(void){
4      int i = 1;
5      while (i < 10)
6      {
7          printf("value of i: %d\n", i);
8          i++;
9      }
10
11     return 0;
12 }
```



```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\\Users\\Maxinne\\Desktop\\BSCS\\BSCS-1 SECOND SEM\\CMSC 21- 1\\LEC 4> cd "c:\\
2.c -o as2 } ; if ($?) { .\\as2 }
value of i: 1
value of i: 2
value of i: 3
value of i: 4
value of i: 5
value of i: 6
value of i: 7
value of i: 8
value of i: 9
PS C:\\Users\\Maxinne\\Desktop\\BSCS\\BSCS-1 SECOND SEM\\CMSC 21- 1\\LEC 4>
```

```
13
14 int main(void){
15     int i = 1;
16     do
17     {
18         printf("value of i: %d\n", i);
19         i++;
20     }while (i < 10);
21     return 0;
22 }
```

```
Go Run Terminal Help as2.c - LEC 4 (Workspace) - Visual
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

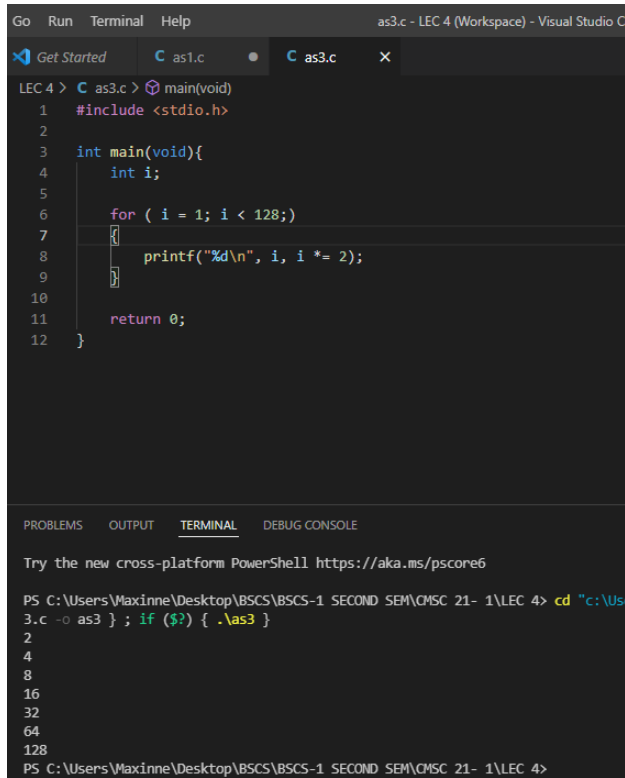
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> cd
2.c -o as2 } ; if ($?) { .\as2 }
value of i: 1
value of i: 2
value of i: 3
value of i: 4
value of i: 5
value of i: 6
value of i: 7
value of i: 8
value of i: 9
PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4>
```

```
24 int main(void){
25     int i = 1;
26
27     for (; i < 10;)
28     {
29         printf("value of i: %d\n", i);
30     }
31     return 0;
32 }
```

[illegible]

3.



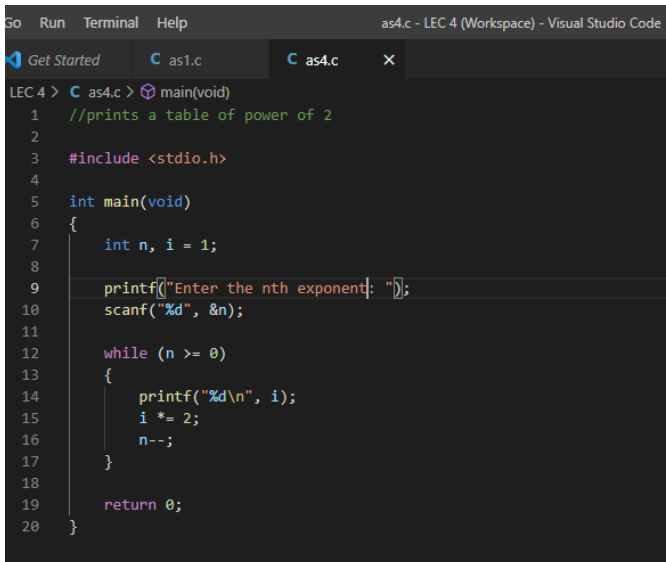
The screenshot shows the Visual Studio Code interface with the file `as3.c` open. The code is as follows:

```
1 #include <stdio.h>
2
3 int main(void){
4     int i;
5
6     for ( i = 1; i < 128;)
7     {
8         printf("%d\n", i, i *= 2);
9     }
10
11     return 0;
12 }
```

The terminal window at the bottom shows the command prompt output:

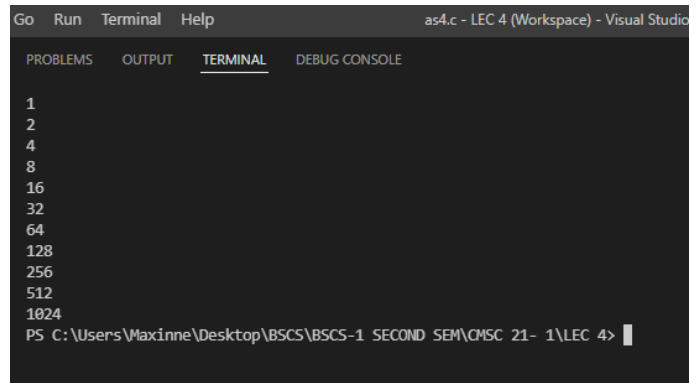
```
PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> cd "C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4"
PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> gcc -o as3 .\as3
PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> .\as3
2
4
8
16
32
64
128
```

4.



The screenshot shows the Visual Studio Code interface with the file `as4.c` open. The code is as follows:

```
1 //prints a table of power of 2
2
3 #include <stdio.h>
4
5 int main(void)
6 {
7     int n, i = 1;
8
9     printf("Enter the nth exponent: ");
10    scanf("%d", &n);
11
12    while (n >= 0)
13    {
14        printf("%d\n", i);
15        i *= 2;
16        n--;
17    }
18
19    return 0;
20 }
```



The terminal window shows the output of the program after running `as4.c`. The output is a list of powers of 2, one per line, corresponding to the input value of 10.

```
1
2
4
8
16
32
64
128
256
512
1024
PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4>
```

5.

```
Go Run Terminal Help • as5.c - LEC 4 (Workspace) - Visual Studio Code
Get Started C as1.c C as3.c C as5.c C calendar.c
LEC 4 > C as5.c > main()
1 #include <stdio.h>
2 int main()
3 {
4     int i, days, starting_day;
5     do{
6         printf("Enter the number of days: ");
7         scanf("%d", &days);
8     }while(days < 28 | days > 31);
9
10    do{
11        printf("Enter the start day number 1=Sun, 2=Mon, ..., 7-SAT: ");
12        scanf("%d", &starting_day);
13    }while(starting_day < 0 | starting_day > 7);
14    printf("\nSUN\tMON\tTUE\tWED\tTHU\tFRI\tSAT\n\n");
15    for(i = 1; i <= days + starting_day - 1; i++)
16    {
17        if(i < starting_day)
18        {
19            printf(" \t");
20        }
21        else
22        {
23            printf("%d\t", i - starting_day + 1);
24        }
25        if((i % 7) == 0)
26        {
27            printf("\n");
28        }
29    }
30
31    return 0;
32 }
```

```
Go Run Terminal Help • as5.c - LEC 4 (Workspace) - Visual Studio Code
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> cd
5.c -o as5 } ; if ($?) { .\as5 }
Enter the number of days: 31
Enter the start day number 1=Sun, 2=Mon, ..., 7-SAT: 3

SUN    MON    TUE    WED    THU    FRI    SAT
6       7       8       9      10     11     12
13     14     15     16     17     18     19
20     21     22     23     24     25     26
27     28     29     30     31

PS C:\Users\Maxinne\Desktop\BSCS\BSCS-1 SECOND SEM\CMSC 21- 1\LEC 4> |
```

Github link: <https://github.com/Maxinne02/Maxinne-Cahilig/tree/main/CMSC21/Lecture%204/Assignments>