True/False
Indicate whether the statement is true or false.

1. The while loop

```java
int j = 0;
while (j < 20)
    j++;

terminates when j > 20.
```

2. The output of the Java code (Assume all variables are properly declared.)

```java
n = 1;
while (n < 5)
{
    n++;
    System.out.print(n + " ");
}
System.out.println();
```

is: 2 3 4 5

3. The output of the following Java code (Assume all variables are properly declared and the input is 6 8 5 3 -1).

```java
num = console.nextInt();
sum = num;
while (num != -1)
{
    num = console.nextInt();
    sum = sum + num;
}
System.out.println(sum);
```

is: 22

4. The method hasNext returns false when the end of the input file is reached.

5. The following for loop executes 20 times. (Assume all variables are properly declared.)

```java
for (i = 0; i <= 20; i++)
    System.out.println(i);
```
6. The output of the Java code (Assume all variables are properly declared.)

```java
System.out.print("St");
for (count = 5; count <= 3; count--)
    System.out.print('o');
System.out.println('p');
```

is: Stoop

7. Unlike a while loop, the body of a do...while loop executes at least once.

8. A break statement is legal in a while loop, but not in a for loop.

Multiple Choice

Identify the choice that best completes the statement or answers the question.

9. What is the value of counter after the following statements execute?

```java
counter = 0;
while (counter <= 50)
    counter = counter + 3;
```

a. 48  
b. 50  
c. 51  
d. 53

10. Suppose sum and num are int variables, and the input is

18 25 61 6 -1

What is the output of the following code? (Assume that console is a Scanner object initialized to the standard input device.)

```java
sum = 0;
um = console.nextInt();
while (num != -1)
{
    sum = sum + num;
    num = console.nextInt();
}
System.out.println(sum);
```

a. 92  
b. 109  
c. 110  
d. None of these
11. What is the output of the following program segment?

```java
int x = 14;
int y = 60;

while (((y - x) % 3) != 0)
{
    System.out.print(y + " ");
y = y - 5;
}

System.out.println();
```

a. 60 55
b. 60 55 50
c. 60 55 50 45
d. None of these

12. In a for loop, which of the following is executed first?

a. initial expression  
   c. update expression
b. logical expression  
   d. for loop statement

13. Suppose j, sum, and num are int variables, and the input is

```
26 34 61 4 -1
```

What is the output of the following code? (Assume that console is a Scanner object initialized to the standard input device.)

```java
sum = 0;
num = console.nextInt();
for (j = 1; j <= 4; j++)
{
    sum = sum + num;
    num = console.nextInt();
}
System.out.println(sum);
```

a. 124  
   c. 126
b. 125  
   d. None of these

14. What is the output of the following Java code?

```java
int x = 1;
int j;

for (j = 0; j <= 2; j++)
x = x * j;
System.out.println(x);
```

a. 0  
   c. 2
b. 1  
   d. None of these
15. Suppose that the input is
5 3 4 -6 8

What is the value of following Java code? (Assume that console is a Scanner object initialized to the standard input device.)

```java
int sum = 0;
int num;
int j;

for (j = 1; j <= 5; j++)
{
    num = console.nextInt();
    if (num < 0)
        continue;
    sum = sum + num;
}

System.out.println(sum);
```

a. 12  

b. 14  

c. 20  

d. None of these

16. What is the output of the following Java code?

```java
int x = 1;

do
{
    System.out.print(x + " ");
    x--;
}
while (x > 0);

System.out.println();
```

a. 1  

b. 1 0  

c. 1 0 -1  

d. None of these

17. Which of the following is not a function of the break statement?

a. To exit early from a loop
b. To skip the remainder of a switch structure
c. To eliminate the use of certain boolean variables in a loop
d. To ignore certain values for variables and continue with the next iteration of a loop

18. Which executes immediately after a continue statement in a for loop?

a. initial statement  

c. loop condition  
b. update statement  

d. the body of the loop
Practice - Chapter 5
Answer Section

TRUE/FALSE

1. ANS: F  
   PTS: 1  
   REF: 240 | 241 | 242

2. ANS: T  
   PTS: 1  
   REF: 243 | 244

3. ANS: F  
   PTS: 1  
   REF: 245 | 246

4. ANS: T  
   PTS: 1  
   REF: 256

5. ANS: F  
   PTS: 1  
   REF: 274 | 275

6. ANS: F  
   PTS: 1  
   REF: 274 | 275 | 276

7. ANS: T  
   PTS: 1  
   REF: 284

8. ANS: F  
   PTS: 1  
   REF: 287

MULTIPLE CHOICE

9. ANS: C  
   PTS: 1  
   REF: 240 | 241

10. ANS: C  
    PTS: 1  
    REF: 246

11. ANS: A  
    PTS: 1  
    REF: 246

12. ANS: A  
    PTS: 1  
    REF: 274

13. ANS: B  
    PTS: 1  
    REF: 274 | 275 | 276 | 277 | 278

14. ANS: A  
    PTS: 1  
    REF: 274

15. ANS: C  
    PTS: 1  
    REF: 274 | 278

16. ANS: A  
    PTS: 1  
    REF: 283 | 284

17. ANS: D  
    PTS: 1  
    REF: 287

18. ANS: B  
    PTS: 1  
    REF: 289