In class Exercises

(Section 3.3A)

1. What is the output produced by the following?

int n = -42;

do {

System.out.println(n);

n = n – 3;

} while ( n > 0 );

1. For each of the following situations, tell which type of loop (while, do-while, or for) would work best:
   1. Summing a series, such as ½ + 1/3 + ¼ + … + 1/10.
   2. Reading in the list of exam scores for one student.
   3. Reading in the number of days of sick leave taken by employees in a department.
2. What is the output of the following?

int n, limit = 10;

for ( n = 1; n < limit; n++ ) {

System.out.println(“n == “ + n);

System.out.println(“limit == “ + limit);

limit = n + 2;

}

1. What is the output produced by the following?

int number = 10;

while (number > 0) {

number = number – 2;

if (number == 4)

break;

System.out.println(number);

}

System.out.println(“The end.”);

1. **Scanner/While loop** The following program should repeatedly prompt the user to enter an integer and, if the integer is not zero, print the square of that integer. A blank line should separate each prompt. The program should end when the user enters a zero (and the square of zero should not be printed). The program should print the message “Done” at the end.

Here is a sample run of the program:

Enter an integer (0 to stop):

2

2 squared is 4

Enter an integer (0 to stop):

4

4 squared is 16

Enter an integer (0 to stop):

0

Done

Fill in the statements that will enable the program to satisfy these specifications.

import java.util.Scanner;

public class Problem10 {

public static void main(String[] args) {

Scanner keyboard = new Scanner(System.in);

1. -42

A do-while loop always executes its body at least one

time.

2. a. A for loop

b. and c. Both require a while loop because the input

list might be empty.

3. **This is an infinte loop.** The first few lines of output

are

n == 1

limit == 10

n == 2

limit == 3

n == 3

limit == 4

n == 4

limit == 5

4. 8

6

The end.

5.

import java.util.Scanner;

public class Problem10 {

public static void main(String[] args) {

Scanner keyboard = new Scanner(System.in);

int number;

System.out.printf("Enter an integer (0 to stop)\n");

number = keyboard.nextInt();

while ( number != 0 ) {

System.out.printf("%d squared is %d\n\n", number,

number \* number);

System.out.printf("Enter an integer (0 to stop)\n");

number = keyboard.nextInt();

}

System.out.printf("%nDone");

}

}