//Tejveer Singh  
//ts355  
//Section 004

**1**. **Exercises** (**Total 20 points**)

1. (5 points) What is the value contained in the integer variable size after the following statements are executed in sequence rather than as individual statements?

size = 6; **//6**  
size = size+12;  **//18**  
size++;  **//19**  
size = size\*4; **//76**size = size/4; **//19**

1. (5 points) What is the value contained in integer variable length after the following statements are executed:

length = 50; **//50**  
length \*= 2; **//100**  
length \*= length; **//10000**  
length /= 100; **//100**

1. (5 points) Given the assignment statements

x = 11; y = 4; z = 8;

what are the values of the expressions

* x + y \* z **//43**
* (x – y) \* z **//56**
* x + (y \* z)  **//43**
* x < y **//False**
* (x < y) || (z != 1) **//False or True**

1. (5 points) The distance between two points (x1, y1) and (x2, y2) is given by the formula

distance = ((x2-x1)2 + (y2-y1)2) ½

Write a Java assignment statement that that assigns to the variable distance the distance between the two points (x1, y1) and (x2, y2).

**Double distance = Math.sqrt((x2-x1)^2+ (y2-y1)^2);**

Assume that the above formula computes a distance in miles. Write a print statement that prints the distance in both miles and kilometers (1 mile = 1.6 kilometers).

**System.out.println(“Miles: “ + distance + “\nKilometers: “ + (distance\*1.6));**

**Note**: The notation (x) ½ specifies the square root which in Java can be computed using the method Math.sqrt().

**Program**

1 //Tejveer Singh  
 2 //ts355  
 3 //Section 004  
 4   
 5 import java.util.\* ; // scanner class  
 6 public class TempConversion  
 7 {   
 8 public static void main( String[] args )  
 9 {  
10 Double boilingPointF = 212.0;  
11 Double freezingPointF = 32.0;  
12 Double boilingPointK = 373.0;  
13 Double freezingPointK = 273.0;  
14   
15 Scanner stdin = new Scanner(System.in);  
16 System.out.println("Enter 0.0 for F -> K, 1 for K -> F");  
17 double F2K = stdin.nextInt();  
18   
19 if (F2K == 0)  
20 {  
21 System.out.println("Please enter a Fahrenheit temperature to convert");  
22 while(stdin.hasNext())  
23 {  
24   
25 double f = stdin.nextDouble();  
26 if (f == boilingPointF)  
27 System.out.println("Boiling point");  
28 if (f == freezingPointF)  
29 System.out.println("Freezing point");  
30 System.out.format("Fahrenheit: %.2f to Kelvin: %.2f \n",f, ((((f-32)\*5)/9)+273));  
31 System.out.println("Please enter a Fahrenheit temperature to convert");   
32 }  
33   
34 }  
35 else if(F2K == 1)  
36 {  
37 System.out.println("Please enter a Kelvin temperature to convert");  
38 while(stdin.hasNext())  
39 {  
40 double k = stdin.nextDouble();  
41 if (k == boilingPointK)  
42 System.out.println("Boiling point");  
43 if (k == freezingPointK)  
44 System.out.println("Freezing point");  
45 System.out.format("Kelvin: %.2f to Fahrenheit: %.2f \n" ,k, ((((k-273)\*9)/(5))+32));  
46 System.out.println("Please enter a Fahrenheit temperature to convert");  
47 }  
48 }  
49 System.out.println("Goodbye");  
50 }  
51 }

----jGRASP exec: java TempConversion  
Enter 0.0 for F -> K, 1 for K -> F  
0  
Please enter a Fahrenheit temperature to convert  
212  
Boiling point  
Fahrenheit: 212.00 to Kelvin: 373.00   
Please enter a Fahrenheit temperature to convert  
32  
Freezing point  
Fahrenheit: 32.00 to Kelvin: 273.00   
Please enter a Fahrenheit temperature to convert  
45  
Fahrenheit: 45.00 to Kelvin: 280.22   
Please enter a Fahrenheit temperature to convert  
99  
Fahrenheit: 99.00 to Kelvin: 310.22   
Please enter a Fahrenheit temperature to convert  
-459.67  
Fahrenheit: -459.67 to Kelvin: -0.15

----jGRASP exec: java TempConversion  
Enter 0.0 for F -> K, 1 for K -> F  
1  
Please enter a Kelvin temperature to convert  
373  
Boiling point  
Kelvin: 373.00 to Fahrenheit: 212.00   
Please enter a Fahrenheit temperature to convert  
273  
Freezing point  
Kelvin: 273.00 to Fahrenheit: 32.00   
Please enter a Fahrenheit temperature to convert  
7.22  
Kelvin: 7.22 to Fahrenheit: -446.40   
Please enter a Fahrenheit temperature to convert  
310.22  
Kelvin: 310.22 to Fahrenheit: 99.00   
Please enter a Fahrenheit temperature to convert  
-273.17  
Kelvin: -273.17 to Fahrenheit: -951.11