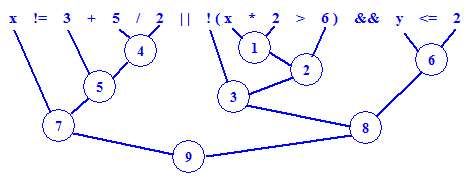
ICS 102 Sample QUIZ#02 Key Term 172

1. [3 points] Draw the evaluation tree for the following boolean expression:

**x != 3 + 5 / 2 || !(x \* 2 > 6) && y <= 2**



1. [3 points] Using DeMorgan’s rule, rewrite the Java expression shown below to an equivalent expression that has no parentheses:

**!( x - y > 3 || y >= 4)**

**x – y <= 3 && y < 4**

1. [4 points] What is the output of the following Java program fragment?

int x = 15, y = 18;

if(x>10)

if(y<20)

if (x < y)

System.out.printf("K"); **K**

else

System.out.printf("L");

else

System.out.printf("M");

else

System.out.printf("N");

1. [4 points] What is the output of the following Java program fragment?

int x = 20;

if(x > 15)

System.out.printf("D");

System.out.printf("R"); **DRFZ**

if(x **>** 14)

System.out.printf("F");

else if(x > 10)

System.out.printf("M");

if(x > 11)

System.out.printf("Z");

1. [6 points] Consider the following program fragment in which x is read from the keyboard. What is the output for the different integer values of **x** typed by the user?

|  |  |
| --- | --- |
| Value of x typed  By user | Program fragment output |
| **6** | **5 9 12** |
| **4** | **8 11** |
| **20** | **22** |

switch(x) {

case 6:

case 3: x = x - 1;

System.out.printf("%d ",x);

case 4:

case 0: x = x + 4;

case 2: System.out.printf("%d ",x);

case 1: x = x + 3;

break;

default : x = x + 2;

}

System.out.printf("%d",x);

1. [10 points] Write a complete interactive Java program that prompts for and reads an integer **choice**. If the **choice** entered is not 1 or 2, the program displays an appropriate error message and terminates; otherwise the program prompts for and reads a **radius**, of type **double**. If the number entered is negative or zero the program displays an appropriate error message and terminates; otherwise it calculates and displays either the area of a circle or the volume of a sphere according to whether the choice is 1 or 2. Assume the value read is in centimeters. Your program must also handle **java.util.InputMismatchException** by displaying an appropriate error message should this exception be thrown.

Note:

Sample program runs:

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |

**import java.util.\*;**

**public class Q05 {**

**public static void main(String[] args) {**

**Scanner scanner = new Scanner(System.in);**

**int choice;**

**double area, volume, radius;**

**System.out.print("Please enter your choice: ");**

**try{**

**choice = scanner.nextInt();**

**if(choice != 1 && choice != 2 )**

**System.out.print("Error: Wrong choice");**

**else{**

**System.out.print("Enter radius [cm] > 0: ");**

**radius = scanner.nextDouble();**

**if(radius <= 0)**

**System.out.printf("Error: radius %.2f <= 0", radius);**

**else if(choice == 1)**

**System.out.printf("Circle area = %.2f square cm%n",**

**Math.PI\*radius\*radius);**

**else**

**System.out.printf("Sphere volume = %.2f cubic cm%n",**

**4.0/3.0 \* Math.PI \* Math.pow(radius, 3));**

**}**

**}**

**catch(InputMismatchException e){**

**System.out.println("Error: " + e);**

**}**

**}**

**}**