Question 2. Ans:\_

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|  | (Game: scissor, rock, paper) Write a program that plays the popular scissor-rockpaper |
|  | game. (A scissor can cut a paper, a rock can knock a scissor, and a paper can |
|  | wrap a rock.) The program randomly generates a number 0, 1, or 2 representing |
|  | scissor, rock, and paper. The program prompts the user to enter a number 0, 1, or |
|  | 2 and displays a message indicating whether the user or the computer wins, loses, |
|  | or draws. |
|  | \*/ |
|  | import java.util.Scanner; |
|  |  |
|  | public class Main { |
|  | public static void main(String[] args) { |
|  | Scanner input = new Scanner(System.in); |
|  |  |
|  | // Generate a random integer 0, 1, or 2 |
|  | int computer = (int)(Math.random() \* 3); |
|  |  |
|  | // Prompt the user to enter a number 0, 1, or 2 |
|  | System.out.print("scissor (0), rock (1), paper (2): "); |
|  | int user = input.nextInt(); |
|  |  |
|  | System.out.print("The computer is "); |
|  | switch (computer) |
|  | { |
|  | case 0: System.out.print("scissor."); break; |
|  | case 1: System.out.print("rock."); break; |
|  | case 2: System.out.print("paper."); |
|  | } |
|  |  |
|  | System.out.print(" You are "); |
|  | switch (user) |
|  | { |
|  | case 0: System.out.print("scissor"); break; |
|  | case 1: System.out.print("rock"); break; |
|  | case 2: System.out.print("paper "); |
|  | } |
|  |  |
|  | // Display result |
|  | if (computer == user) |
|  | System.out.println(" too. It is a draw"); |
|  | else |
|  | { |
|  | boolean win = (user == 0 && computer == 2) || |
|  | (user == 1 && computer == 0) || |
|  | (user == 2 && computer == 1); |
|  | if (win) |
|  | System.out.println(". You won"); |
|  | else |
|  | System.out.println(". You lose"); |
|  | } |
|  | } |
|  | } |

Question 3 Ans:-

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|  | (Conversion from kilograms to pounds) Write a program that displays the following |
|  | table (note that 1 kilogram is 2.2 pounds): |
|  | Kilograms Pounds |
|  | 1 2.2 |
|  | 3 6.6 |
|  | ... |
|  | 197 433.4 |
|  | 199 437.8 |
|  | \*/ |
|  | public class Main { |
|  | public static void main(String[] args) { |
|  | final double POUNDS\_PER\_KILOGRAM = 2.2; // Create constant |
|  |  |
|  | // Display header for table |
|  | System.out.println("Kilograms Pounds"); |
|  |  |
|  | // Display table |
|  | for (int i = 1; i <= 199; i += 2) {  System.out.printf("%-15d%6.1f\n", i, (i \* POUNDS\_PER\_KILOGRAM)); |
|  | } |
|  | } |
|  | } |

Question 4 Ans:-

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|  | (Display pyramid) Write a program that prompts the user to enter an integer from |
|  | 1 to 15 and displays a pyramid, as shown in the following sample run: |
|  | \*/ |
|  | import java.util.Scanner; |
|  |  |
|  | public class Main { |
|  | public static void main(String[] args) { |
|  | // Create a Scanner object |
|  | Scanner input = new Scanner(System.in); |
|  |  |
|  | // Prompt the user to enter an integer from 1 to 15 |
|  | System.out.print("Enter the number of lines: "); |
|  | int numberOfLines = input.nextInt(); |
|  |  |
|  | // Display pyramid |
|  | for (int rows = 1; rows <= numberOfLines; rows++) { |
|  | // Create spaces in each row |
|  | for (int s = numberOfLines - rows; s >= 1; s--) { |
|  | System.out.print(" "); |
|  | } |
|  | // Create decending numbers in each row |
|  | for (int l = rows; l >= 2; l--) { |
|  | System.out.print(l + " "); |
|  | } |
|  | // Create ascending number in each row |
|  | for (int r = 1; r <= rows; r++) { |
|  | System.out.print(r + " "); |
|  | } |
|  | // End line |
|  | System.out.println(); |
|  | } |
|  | } |
|  | } |

Question 5 Ans:-

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| /\* |
|  | (Display numbers in a pyramid pattern) Write a nested for loop that prints the |
|  | following output: |
|  | \*/ |
|  | public class Main { |
|  | public static void main(String[] args) { |
|  | int startRight = 0, // Initialize decending numbers |
|  | endSpace = 7; // Initialize number of white space in row |
|  | // Display number of rows and numbers in each row |
|  | for (int row = 1; row <= 128; row += row) { |
|  | // Display white space |
|  | for (int startSpace = 0; startSpace < endSpace; startSpace++)  { |
|  | System.out.print(" "); |
|  | } |
|  | // Display acending numbers |
|  | for (int l = 1; l <= row; l += l) { |
|  | System.out.printf("%4d", (l)); |
|  | } |
|  | // Display decending numbers |
|  | for (int r = startRight; r > 0 ; r /= 2 ) { |
|  | System.out.printf("%4d", (r)); |
|  | } |
|  | System.out.println(); // End line |
|  | endSpace--; // Decrement endSpace |
|  | startRight = row; // Assign row to startRight |
|  | } |
|  | } |

}