**Q1:**

package Q\_01;  
import java.util.Scanner;  
  
public class Q\_01a {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 double B, A, C, X, Y, radius;  
 System.*out*.println("Enter values for B, A, C, X, and Y:");  
 B = scanner.nextDouble();  
 A = scanner.nextDouble();  
 C = scanner.nextDouble();  
 X = scanner.nextDouble();  
 Y = scanner.nextDouble();  
  
 //Part a)  
 System.*out*.println("a) Square root of B² + 4AC: " + Math.*sqrt*((B \* B) + (4 \* A \* C)));  
  
 //Part b)  
 System.*out*.println("b) Square root of X + 4Y³: " + Math.*sqrt*(X + (4 \* Math.*pow*(Y, 3))));  
  
 //Part c)  
 System.*out*.println("c) Cube root of product of X and Y: " + Math.*cbrt*(X \* Y));  
  
 //Part d)  
 System.*out*.println("d) Enter radius of circle:");  
 radius = scanner.nextDouble();  
 System.*out*.println("Area of circle: " + (Math.*PI* \* radius \* radius));  
 }  
}

**Output:**

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AI-generated content may be incorrect.

**Q2:**

package Q\_02;  
import java.util.Scanner;  
  
public class Q\_02 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for input  
 System.*out*.print("Enter length in centimeters: ");  
 double cm = scanner.nextDouble();  
  
 // Conversion calculations  
 double inches = cm / 2.54;  
 int feet = (int) (inches / 12); // Get the whole feet part  
 double remainingInches = inches % 12; // Get the remaining inches  
  
 // Output result  
 System.*out*.println(cm + " cm is approximately " + feet + " feet and " + String.*format*("%.2f", remainingInches) + " inches.");  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q3:**

package Q\_03;  
import java.util.Scanner;  
  
public class Q\_03 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for input  
 System.*out*.print("Enter temperature in Celsius: ");  
 double celsius = scanner.nextDouble();  
  
 // Convert Celsius to Fahrenheit  
 double fahrenheit = (1.8 \* celsius) + 32;  
  
 // Output the result  
 System.*out*.println("Temperature in Fahrenheit: " + String.*format*("%.2f", fahrenheit));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q4:**

package Q\_04;  
import java.util.Scanner;  
  
public class Q\_04 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for input  
 System.*out*.print("Enter body weight in pounds: ");  
 double bodyWeight = scanner.nextDouble();  
  
 // Calculate daily calorie requirement  
 double calories = bodyWeight \* 19;  
  
 // Output the result  
 System.*out*.println("Calories needed per day: " + String.*format*("%.2f", calories));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q5:**

package Q\_05;  
import java.util.Scanner;  
  
public class Q\_05 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for input  
 System.*out*.print("Enter temperature in Fahrenheit: ");  
 double fahrenheit = scanner.nextDouble();  
  
 // Convert Fahrenheit to Celsius  
 double celsius = (5.0 / 9) \* (fahrenheit - 32);  
  
 // Output the result  
 System.*out*.println("Temperature in Celsius: " + String.*format*("%.2f", celsius));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q6:**

package Q\_06;  
import java.util.Scanner;  
  
public class Q\_06 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Get the current year  
 int currentYear = java.time.Year.*now*().getValue();  
  
 // Prompt user for input  
 System.*out*.print("Enter your birth year: ");  
 int birthYear = scanner.nextInt();  
  
 // Calculate age  
 int age = currentYear - birthYear;  
  
 // Output result  
 System.*out*.println("You were born in " + birthYear + " and will be (are) " + age + " this year.");  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q7:**

ackage Q\_07;  
import java.util.Scanner;  
  
public class Q\_07 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for weight and height  
 System.*out*.print("Enter weight in kg: ");  
 double weight = scanner.nextDouble();  
  
 System.*out*.print("Enter height in cm: ");  
 double height = scanner.nextDouble();  
  
 // Calculate BMI  
 double bmi = weight / Math.*pow*(height / 100.0, 2);  
  
 // Output result  
 System.*out*.println("Your BMI is: " + String.*format*("%.2f", bmi));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q8:**

package Q\_08;  
import java.util.Scanner;  
  
public class Q\_08 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for radius  
 System.*out*.print("Enter the radius of the sphere: ");  
 double radius = scanner.nextDouble();  
  
 // Calculate volume using formula V = (4/3) \* π \* r^3  
 double volume = (4.0 / 3) \* 3.14 \* Math.*pow*(radius, 3);  
  
 // Output result  
 System.*out*.println("The volume of the sphere is: " + String.*format*("%.2f", volume));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q9:**

package Q\_09;  
import java.util.Scanner;  
  
public class Q\_09 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 // Prompt user for input  
 System.*out*.print("Enter principal amount (P): ");  
 double principal = scanner.nextDouble();  
  
 System.*out*.print("Enter annual interest rate (R) in %: ");  
 double rate = scanner.nextDouble();  
  
 System.*out*.print("Enter number of years (N): ");  
 int years = scanner.nextInt();  
  
 // Calculate final investment value  
 double finalAmount = principal \* Math.*pow*(1 + (rate / 100), years);  
  
 // Output result  
 System.*out*.println("Your investment will grow to: $" + String.*format*("%.2f", finalAmount));  
  
 scanner.close();  
 }  
}

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AI-generated content may be incorrect.Output:**

**Q10:**

package Q\_10;  
import java.util.Scanner;  
  
public class Q\_10 {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
  
 final int MONTHS\_IN\_YEAR = 12;  
  
 // Prompt user for input  
 System.*out*.print("Enter loan amount: ");  
 double loanAmount = scanner.nextDouble();  
  
 System.*out*.print("Enter annual interest rate (in %): ");  
 double annualInterestRate = scanner.nextDouble();  
  
 System.*out*.print("Enter loan period (in years): ");  
 int loanPeriod = scanner.nextInt();  
  
 // Convert annual interest rate to monthly interest rate  
 double monthlyInterestRate = annualInterestRate / 100.0 / MONTHS\_IN\_YEAR;  
  
 // Calculate number of payments  
 int numberOfPayments = loanPeriod \* MONTHS\_IN\_YEAR;  
  
 // Calculate monthly payment  
 double monthlyPayment = (loanAmount \* monthlyInterestRate) /  
 (1 - Math.*pow*(1 / (1 + monthlyInterestRate), numberOfPayments));  
  
 // Calculate total payment  
 double totalPayment = monthlyPayment \* numberOfPayments;  
  
 // Output results  
 System.*out*.println("Monthly Payment: $" + String.*format*("%.2f", monthlyPayment));  
 System.*out*.println("Total Payment: $" + String.*format*("%.2f", totalPayment));  
  
 scanner.close();  
 }  
}

**Output:**

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AI-generated content may be incorrect.