Java Homework (Chapter 3)

3.1

**import** java.util.Scanner;  
**public class** solveQuadraticEquations {  
 **public static void** main(String[] args){  
 Scanner input = **new** Scanner(System.***in***);  
 System.***out***.println(**"Enter a, b, c: "**);  
 **double** a = input.nextDouble();  
 **double** b = input.nextDouble();  
 **double** c = input.nextDouble();  
 **double** delta = Math.*pow*(b,2) - 4 \* a \* c;  
 **if** (delta > 0 ) {  
 **double** r1 = (-b + Math.*pow*(delta,0.5))/(2\*a);  
 **double** r2 = (-b - Math.*pow*(delta,0.5))/(2\*a);  
 System.***out***.print(**"The equation has two roots "** + r1 + **" and "** + r2);  
 }  
 **else if** (delta == 0){  
 **double** r = (-b)/(2\*a);  
 System.***out***.print(**"The equation has one root "** + r);  
 }  
 **else** {  
 System.***out***.print(**"The equation has no real roots"**);  
 }  
 }  
}

3.9

**import** java.util.Scanner;  
**public class** checkISBNofTen {  
 **public static void** main(String[] Args){  
 Scanner input = **new** Scanner(System.***in***);  
 System.***out***.print(**"Enter the first 9 digits of an ISBN as integer: "**);  
 **int** ISBN = input.nextInt();  
 **int** d1 = ISBN / 100000000;  
 **int** remainingDigits = ISBN % 100000000;  
 **int** d2 = remainingDigits / 10000000;  
 remainingDigits %= 10000000;  
 **int** d3 = remainingDigits / 1000000;  
 remainingDigits %= 1000000;  
 **int** d4 = remainingDigits / 100000;  
 remainingDigits %= 100000;  
 **int** d5 = remainingDigits / 10000;  
 remainingDigits %= 10000;  
 **int** d6 = remainingDigits /1000;  
 remainingDigits %= 1000;  
 **int** d7 = remainingDigits / 100;  
 remainingDigits %= 100;  
 **int** d8 = remainingDigits / 10;  
 remainingDigits %= 10;  
 **int** d9 = remainingDigits;  
 **int** d10 = (d1 \* 1 + d2 \*2 + d3 \*3 + d4 \* 4 + d5 \*5 + d6 \* 6 + d7 \* 7 + d8 \* 8 + d9 \* 9) % 11;  
 **if** (d10 == 10){  
 System.***out***.print(**"The ISBN-10 number is "** + d1 + d2 + d3 + d4 + d5 + d6 + d7 + d8 + d9 + **"X"**);  
 }  
 **else** {  
 System.***out***.print(**"The ISBN-10 number is "** + d1 + d2 + d3 + d4 + d5 + d6 + d7 + d8 + d9 + d10);  
 }  
 }  
}

3.12

**import** java.util.Scanner;  
**public class** palindrome {  
 **public static void** main(String[] Args){  
 Scanner input = **new** Scanner(System.***in***);  
 System.***out***.print(**"Enter a word or a number:"**);  
 String str = input.nextLine();  
 **int** len = str.length();  
 **int** start = 0;  
 **int** end = len - 1;  
 **boolean** palindrome = **true**;  
 **while** (start < end){  
 **if** (str.charAt(start) != str.charAt(end)){  
 palindrome = **false**;  
 **break**;  
 }  
 start++;  
 end--;  
 }  
 **if** (palindrome){  
 System.***out***.print(str + **" is a palindrome"**);  
 }  
 **else**{  
 System.***out***.print(str + **" is not a palindrome"**);  
 }  
 }  
}

3.24  
public class pickCard {  
 public static void main(String[] Args){  
 int rank = (int) (Math.*random*() \* 13 + 1);  
 int suit = (int) (Math.*random*() \* 4 + 1);  
 switch (rank) {  
 case 1 : System.*out*.print("The card you picked is Ace of "); break;  
 case 2 :  
 case 3 :  
 case 4 :  
 case 5 :  
 case 6 :  
 case 8 :  
 case 9 :  
 case 10 : System.*out*.print("The card you picked is " + rank + " of "); break;  
 case 11 : System.*out*.print("The card you picked is Jack of "); break;  
 case 12 : System.*out*.print("The card you picked is Queen of "); break;  
 case 13 : System.*out*.print("The card you picked is King of ");  
 }  
 switch (suit) {  
 case 1 : System.*out*.print("Clubs"); break;  
 case 2 : System.*out*.print("Diamonds"); break;  
 case 3 : System.*out*.print("Hearts"); break;  
 case 4 : System.*out*.print("Spades");  
 }  
 }  
}