Question 1:

import java.util.Scanner;

class banking\_account{

int amount = 5000;

public void initiate()

{

login l1 = new login();

try{

l1.acceptInput();

l1.verify();

}catch(Exception e)

{

try{

l1.acceptInput();

l1.verify();

}catch(Exception f)

{

}

}

}

public int getBalance(){

return amount;

}

public void add(int amt){

amount = amount + amt;

System.out.println("Amount deposited Successfully");

System.out.println(" ");

System.out.println("Total Balance: " +amount);

System.out.println(" ");

}

public void withdraw(int amt){

System.out.println(" ");

if(amount < amt)

{

invalid\_transaction invalidWithDraw = new invalid\_transaction("InValid Withdrawal Amount");

System.out.println(invalidWithDraw.getMessage());

}else{

amount = (amount - amt);

System.out.println("Please Collect your " + amt +" Rupees");

System.out.println(" ");

System.out.println("Available Balance: " +amount);

System.out.println(" ");

       }

    }

}

Question 2:

class FactorialCalculator {

// Method to calculate the factorial of a number

public int calculateFactorial(int number) {

if (number == 0 || number == 1) {

return 1;

} else {

int factorial = 1;

for (int i = 2; i <= number; i++) {

factorial \*= i;

}

return factorial;

}

}

}

public class Main {

public static void main(String[] args) {

FactorialCalculator factorialCalculator = new FactorialCalculator();

int number1 = 5;

int number2 = 10;

int factorial1 = factorialCalculator.calculateFactorial(number1);

int factorial2 = factorialCalculator.calculateFactorial(number2);

System.out.println("Factorial of " + number1 + ": " + factorial1);

System.out.println("Factorial of " + number2 + ": " + factorial2);

}

}

Question 3:

class ArmstrongNumberChecker {

private int calculatePower(int base, int exponent) {

int result = 1;

for (int i = 0; i < exponent; i++) {

result \*= base;

}

return result;

}

private int countDigits(int number) {

int count = 0;

while (number > 0) {

number /= 10;

count++;

}

return count;

}

public boolean isArmstrongNumber(int number) {

int numDigits = countDigits(number);

int tempNumber = number;

int sum = 0;

while (tempNumber > 0) {

int digit = tempNumber % 10;

sum += calculatePower(digit, numDigits);

tempNumber /= 10;

}

return sum == number;

}

}

public class Main {

public static void main(String[] args) {

ArmstrongNumberChecker armstrongChecker = new ArmstrongNumberChecker();

int number1 = 153;

int number2 = 370;

int number3 = 9474;

int number4 = 123;

System.out.println(number1 + " is an Armstrong number? " + armstrongChecker.isArmstrongNumber(number1));

System.out.println(number2 + " is an Armstrong number? " + armstrongChecker.isArmstrongNumber(number2));

System.out.println(number3 + " is an Armstrong number? " + armstrongChecker.isArmstrongNumber(number3));

System.out.println(number4 + " is an Armstrong number? " + armstrongChecker.isArmstrongNumber(number4));

}

}

Question 4:

class NumberAdder {

public int calculateSum(int[] numbers) {

int sum = 0;

for (int number : numbers) {

sum += number;

}

return sum;

}

}

public class Main {

public static void main(String[] args) {

NumberAdder numberAdder = new NumberAdder();

int[] numbers1 = {1, 2, 3, 4, 5};

int[] numbers2 = {10, 20, 30, 40, 50};

int sum1 = numberAdder.calculateSum(numbers1);

int sum2 = numberAdder.calculateSum(numbers2);

System.out.println("Sum of numbers1: " + sum1);

System.out.println("Sum of numbers2: " + sum2);

}

}