Level 2 Practice Programs

Q1) Write a program to create a basic calculator that can perform addition, subtraction, multiplication, and division. The program should ask for two numbers (floating point) and perform all the operations

Hint =>

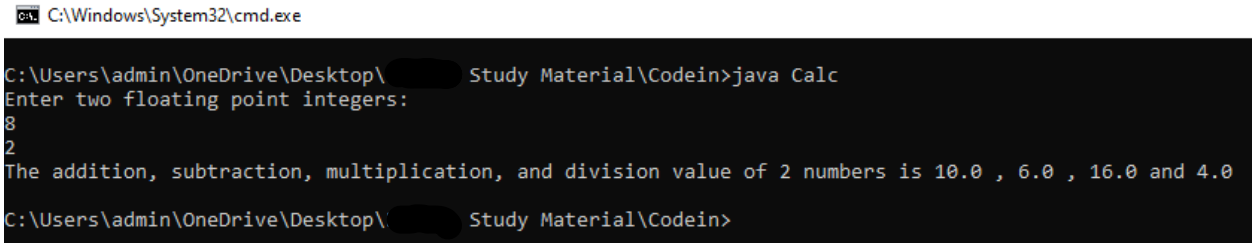
a. Create a variable number1 and number 2 and take user inputs.
b. Perform Arithmetic Operations of addition, subtraction, multiplication and division and assign the result to a variable and finally print the result

I/P => number1, number2
O/P => The addition, subtraction, multiplication and division value of 2 numbers ___ and ___ is ___, ____, ____, and ___

Ans) ***Code;***

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class Calc{
	public static void main(String[] args){
		double num1,num2;//declaring variables
		Scanner myobj=new Scanner(System.in);//declaring an object for scanner
		System.out.println("Enter two floating point integers:");//prompting user to input numbers
		num1=myobj.nextDouble();//reading and assigning values
		num2=myobj.nextDouble();//reading and assigning values
		double add=num1+num2;//performing required operation
		double sub=num1-num2;//performing required operation
		double mul=num1*num2;//performing required operation
		double div=num1/num2;//performing required operation
		System.out.println("The addition, subtraction, multiplication, and division value of 2 numbers is "+add+" , "+sub+" , "+mul+" and "+div);//print required entities
		}
}
```

Output Verification:



Q2) Write a program that takes the base and height to find area of a triangle in square inches and square centimeters

Hint => Area of a Triangle is ½ * base * height

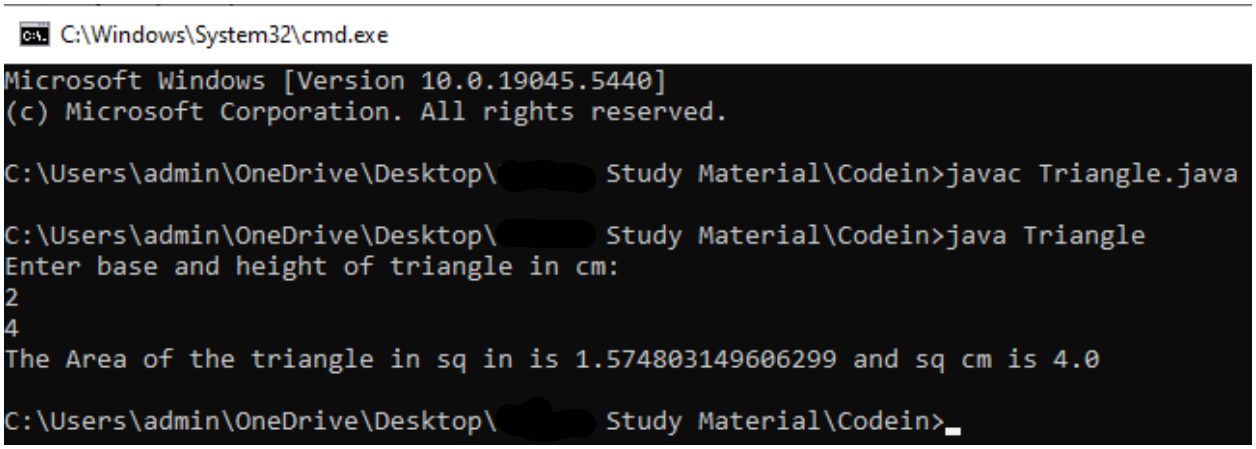
I/P => base, height

O/P => Your Height in cm is ___ while in feet is ___ and inches is ___

Ans) Code:

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class Triangle{
	public static void main(String[] args){
		Double base,height,area,areain;//declare variables base,height,area,areain
		Scanner myobj=new Scanner(System.in);//declare scanner object
		System.out.println("Enter base and height of triangle in cm: ");//prompt user for input
		base=myobj.nextDouble();//store keyed in vslue into variable
		height=myobj.nextDouble();//store keyed in vslue into variable
		area=1.0/2.0*base*height;//perform the required operation
		areain=area/2.54;//conversion to inches
		System.out.println("The Area of the triangle in sq in is "+areain+" and sq cm is "+area);//print required entities
		}
}
```

Output Verification:



Q3) Write a program to find the side of the square whose parameter you read from user

Hint => Perimeter of Square is 4 times side

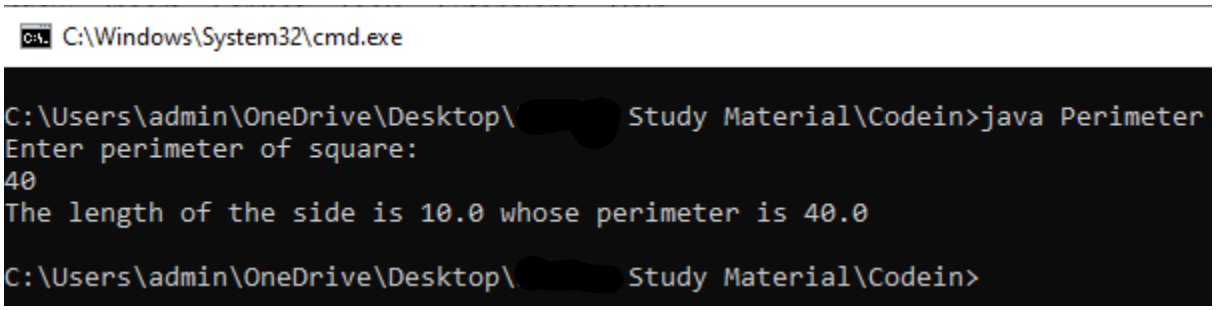
I/P => perimeter

O/P => The length of the side is ___ whose perimeter is ____

Ans) Code:

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class Perimeter{
	public static void main(String[] args){
		double perimeter,side;//declare required variables
		Scanner myobj=new Scanner(System.in);//declare scanner object
		System.out.println("Enter perimeter of square: ");//prompt user for input
		perimeter=myobj.nextDouble();//store keyed in value in variable
		side=perimeter/4;//perform required operation
		System.out.println("The length of the side is "+side+" whose perimeter is
"+perimeter);//print the required entities
	}
}
```

Output Verification:



Q4) Write a program the find the distance in yards and miles for the distance provided by user in feets

Hint => 1 mile = 1760 yards and 1 yard is 3 feet

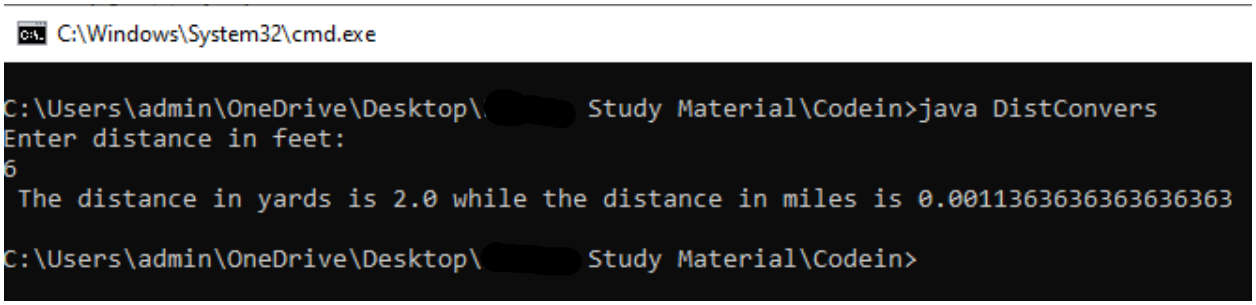
I/P => distanceInFeet

O/P => Your Height in cm is ___ while in feet is ___ and inches is ___

Ans) ***<u>Code:</u>***

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class DistConvers{
	public static void main(String[] args){
		double dist,disty,distm;//declare the variables
		Scanner myobj=new Scanner(System.in);//declare scanner object
		System.out.println("Enter distance in feet: ");//prompt user for input
		dist=myobj.nextDouble();//store the value in variable
		disty=dist/3;//performing conversion
		distm=disty/1760;//performing conversion
		System.out.println(" The distance in yards is "+disty+" while the distance in miles is "+distm);//print the required entities
		}
	}
```

Output Verification:



Q5) Write a program to input the unit price of an item and the quantity to be bought. Then, calculate the total price.

Hint => NA

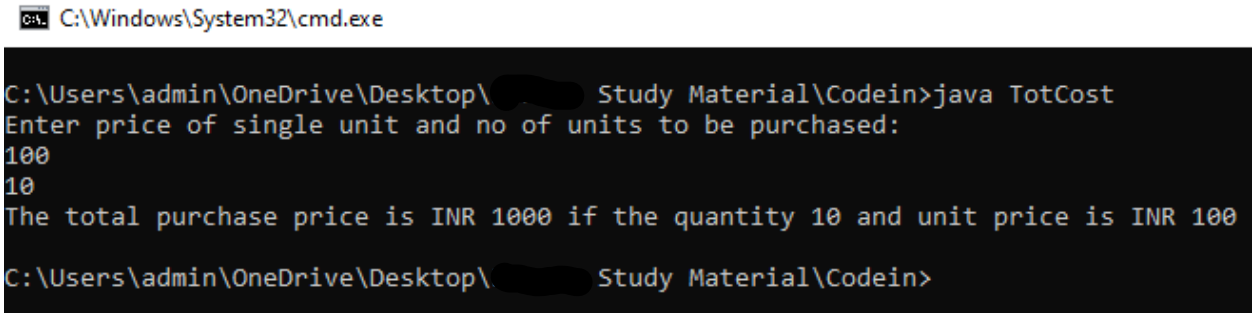
I/P => unitPrice, quantity

O/P => The total purchase price is INR ___ if the quantity ___ and unit price is INR ___

Ans) Code:

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class TotCost{
	public static void main(String[] args){
	int price,qty,total;//declare the variables
	Scanner myobj=new Scanner(System.in);//declare scanner object
	System.out.println("Enter price of single unit and no of units to be purchased: ");//prompt user for input
	price=myobj.nextInt();//store the value in variable
	qty=myobj.nextInt();//store the value in variable
	total=price*qty;//calculate the total price
	System.out.println("The total purchase price is INR "+total+" if the quantity "+qty+" and unit price is INR "+price);//print the required entities
	}
}
```

Output Verification:



Q6) Write a program to take 2 numbers and print their quotient and reminder

Hint => Use division operator (/) for quotient and moduli operator (%) for reminder

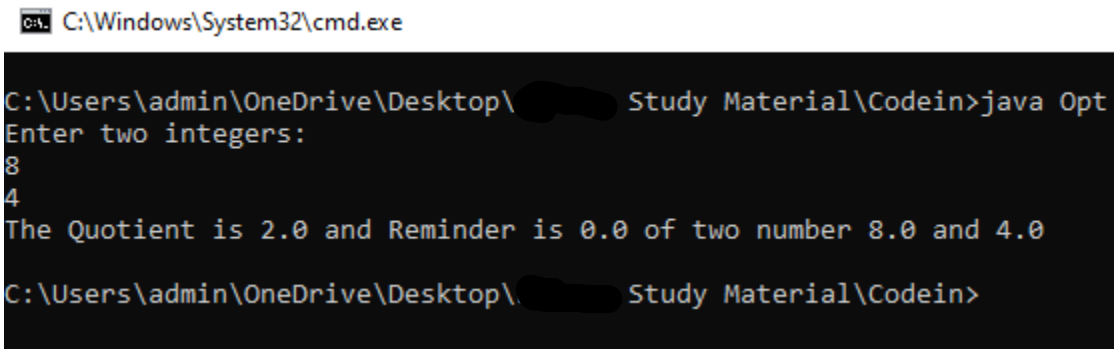
I/P => number1, number2

O/P => The Quotient is ___ and Reminder is ___ of two number ___ and ___

Ans) <u>Code:</u>

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class Opt{
	public static void main(String[] args){
		double num1,num2,div,mod;//declare required variables
		Scanner myobj= new Scanner(System.in);//declare scanner object
		System.out.println("Enter two integers: ");//prompt user for input
		num1=myobj.nextDouble();//store the value in variable
		num2=myobj.nextDouble();//store the value in variable
		div=num1/num2;//finding quotient
		mod=num1%num2;//finding remainder
		System.out.println("The Quotient is "+div+" and Reminder is "+mod+" of two
number "+num1+" and "+num2);//print the required entities
		}
	}
```

Output Verification:



Q7) Write an ***IntOperation*** program by taking a, b, and c as input values and print the following integer operations a + b *c, a * b + c, c + a / b, and a % b + c. Please also understand the precedence of the operators.

Hint =>

a. Create variables a, b, c of int data type.
b. Take user input for a, b, and c.
c. Compute 3 integer operations and assign the result to a variable
d. Finally, print the result and try to understand operator precedence.

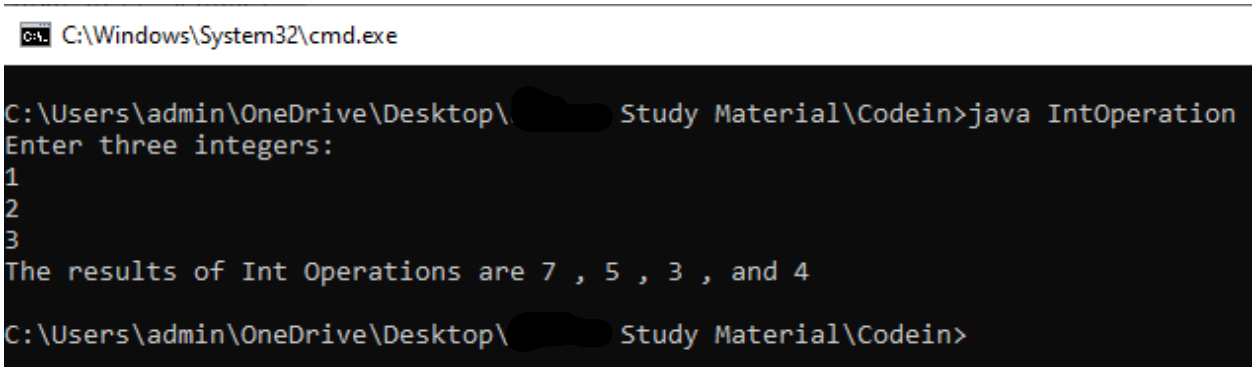
I/P => fee, discountPrecent

O/P => The results of Int Operations are —-, -—, and —-

Ans) Code:

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class IntOperation{
	public static void main(String[] args){
		int a,b,c,op1,op2,op3,op4;//declare variables
		Scanner myobj=new Scanner(System.in);//declare scanner object
		System.out.println("Enter three integers: ");//prompt user for input
		a=myobj.nextInt();//assign value to variables
		b=myobj.nextInt();//assign value to variables
		c=myobj.nextInt();//assign value to variables
		op1= a + b *c;//perform required operations
		op2=a * b + c;//perform required operations
		op3=c + a / b;//perform required operations
		op4=a % b + c;//perform required operations
		System.out.println("The results of Int Operations are "+op1+" , "+op2+" , "+op3+"
, and "+op4);//print required entities
		}
	}
```

Output Verification:



Q8) Similarly, write the ***DoubleOpt*** program by taking double values and doing the same operations.

Ans) Code:

```
//import java utility scanner
import java.util.Scanner;
//declare class
public class IntOperation{
	public static void main(String[] args){
		double a,b,c,op1,op2,op3,op4;//declare variables
		Scanner myobj=new Scanner(System.in);//declare scanner object
		System.out.println("Enter three integers: ");//prompt user for input
		a=myobj.nextDouble();//assign value to variables
		b=myobj.nextDouble();//assign value to variables
		c=myobj.nextDouble();//assign value to variables
		op1= a + b *c;//perform required operations
		op2=a * b + c;//perform required operations
		op3=c + a / b;//perform required operations
		op4=a % b + c;//perform required operations
		System.out.println("The results of Int Operations are "+op1+" , "+op2+" , "+op3+"
, and "+op4);//print required entities
		}
	}
```

Output Verification: