オブジェクト指向プログラミング No.6

情報通信システム17173033後藤亘

**1-a**

**ソースコード**

class Id{

static int counter = 0;

static int max = 0;

private int id;

public Id(){

id = ++counter;

}

public int getId(){

return id;

}

static int getMaxId(){

if(max < counter){

max = counter;

}

return max;

}

}

public class IdTester{

public static void main(String[] args){

Id a = new Id();

Id b = new Id();

System.out.println("aの識別番号:" + a.getId());

System.out.println("bの識別番号:" + b.getId());

System.out.println("a.counter" + a.getId());

System.out.println("b.counter" + b.getId());

System.out.println("識別番号の最大値" + Id.getMaxId());

}

}

**実行結果**

sd:homework gotouwataru$ java IdTester

aの識別番号:1

bの識別番号:2

a.counter1

b.counter2

識別番号の最大値2

**1-b**

**ソースコード**

import java.util.Scanner;

class ExId{

private static int counter = 0;

private int id;

public ExId(int y){

id = counter + y;

counter = id;

}

public int getId(){

return id;

}

}

public class IdTester2{

public static void main(String[] args){

Scanner stdIn = new Scanner(System.in);

int x1, x2;

x1 = stdIn.nextInt();

ExId a = new ExId(x1);

x2 = stdIn.nextInt();

ExId b = new ExId(x2);

System.out.println("aの識別番号:" + a.getId());

System.out.println("bの識別番号:" + b.getId());

}

}

**実行結果**

^[[Asd:homework gotouwataru$ java IdTester2

4

5

aの識別番号:4

bの識別番号:9

**2**

**ソースコード**

class Math1{

static double sin(double x){

return Math.sin(Math.PI\*(x));

}

static double cos(double x){

return Math.cos(Math.PI\*(x));

}

static double tan(double x){

return Math.tan(Math.PI\*(x));

}

}

class Mtest1{

public static void main(String[] args){

Double a1 = Math1.cos(0.7);

Double a2 = Math1.sin(0.5);

System.out.println(a1+2\*a2);

Double b1 = Math1.sin(0.8);

Double b2 = Math1.cos(0.2);

System.out.println(1.0/(2\*b1+b2));

Double c1;

c1 = 0.0;

for(double k = 1; k < 6; k++){

c1 = c1 + (2\*Math.tan(k/10)) + Math.tan(2\*k/10);

}

System.out.println(c1);

}

}

**実行結果**

sd:homework gotouwataru$ java Mtest1

1.412214747707527

0.5038830490084674

7.05963967586519

**3**

**ソースコード**

class Math3{

double x = 0.0;

Math3(double x){

this.x = x;

}

void setX(){

this.x = x;

}

double getX(){

return x;

}

double sin(){

return Math.sin(x);

}

double cos(){

return Math.cos(x);

}

double tan(){

return Math.tan(x);

}

double sin2(){

return Math.sin(Math.PI\*(x));

}

double cos2(){

return Math.cos(Math.PI\*(x));

}

double tan2(){

return Math.tan(Math.PI\*(x));

}

}

class Mtest3{

public static void main(String[] args){

Math3 a1 = new Math3(0.7);

Math3 a2 = new Math3(0.5);

double ans11 = a1.cos2();

double ans12 = a2.sin2();

System.out.println(ans11 + 2\*ans12);

Math3 b1 = new Math3(0.8);

Math3 b2 = new Math3(0.2);

double ans21 = b1.sin2();

double ans22 = b2.cos2();

System.out.println(1.0/(2\*ans21+ans22));

double answer;

answer = 0.0;

for(int k = 1; k < 6; k++){

Math3 c1 = new Math3(k/10.0);

Math3 c2 = new Math3((2\*k)/10.0);

answer = answer + (2 \* c1.tan2()) + c2.tan2();

}

System.out.println(answer);

}

}

実行結果

sd:homework gotouwataru$ java Mtest3

1.412214747707527

0.5038830490084674

3.2662478706390752E16

3番の最後の回答が合わないのでもう一度やって提出します。

1/21の提出後から何度か違うアプローチを試しましたが、3番の最後が合わない理由がわかりませんでした。