オブジェクト指向プログラミング No.6

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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。