Problem 1

```
import java.util.*;
class A{
 public static void main(String[]a){
  Scanner s=new Scanner(System.in);
  int t=0;
  try{
   for(int i=0;i<5;i++){
    int m=s.nextInt();
    if(m<0||m>100)throw new Exception();
    t+=m;
   }
   double avg=t/5.0;

System.out.println("Total:"+t+"\nAvg:"+avg+"\nGrade:"+(avg>=90?"A":avg>=80?"B":avg>=70?"C":avg>=6
0?"D":"F"));
  }catch(Exception e){System.out.println("Invalid marks");}
 }
}
```

Problem 2

```
import java.util.*;
public class Bill{
 public static void main(String[]a){
  Scanner s=new Scanner(System.in);
  int n=s.nextInt();
  String it[]=new String[n]; double p[]=new double[n]; int q[]=new int[n];
  for(int i=0;i<n;i++){it[i]=s.next(); p[i]=s.nextDouble(); q[i]=s.nextInt();}
  double t=0;
```

```
  for(int i=0;i<n;i++) t+=p[i]*q[i];
  double d=t>2000?t*0.1:0;
  System.out.println("Item\tPrice\tQty\tAmt");
  for(int i=0;i<n;i++) System.out.println(it[i]+"\t"+p[i]+"\t"+q[i]+"\t"+(p[i]*q[i]));
  System.out.println("Total:"+t+"\nDiscount:"+d+"\nNet:"+(t-d));
 }
}
```

Problem 3

```
import java.util.*;
public class WordCount {
 public static void main(String[] args) {
  Scanner sc = new Scanner(System.in);
  System.out.println("Enter a sentence:");
  String sentence = sc.nextLine();
  System.out.println("Enter word to count:");
  String word = sc.next();

  String[] words = sentence.split("\\s+"); // split sentence into words
  int count = 0;
  for(String w : words) if(w.equals(word)) count++;

  System.out.println("Total words: " + words.length);
  System.out.println("Occurrences of '" + word + "': " + count);
 }
}
```

Problem 4

```
import java.util.*;
public class PasswordCheck {
 public static void main(String[] args) {
```

```
 Scanner sc = new Scanner(System.in);
 System.out.println("Enter password:");
 String p = sc.next();
 try {
  if(p.length()<8) throw new Exception("Password too short");
  if(!p.matches(".*[A-Z].*")) throw new Exception("No uppercase letter");
  if(!p.matches(".*[a-z].*")) throw new Exception("No lowercase letter");
  if(!p.matches(".*\\d.*")) throw new Exception("No digit");
  if(!p.matches(".*[^a-zA-Z0-9].*")) throw new Exception("No symbol");
  System.out.println("Password is strong");
 } catch(Exception e) {
  System.out.println("Invalid password: " + e.getMessage());
 }
}
}
```

Problem 5

```
import java.util.*;
public class ATM {
 static double b=0;
 static void dep(double a){b+=a; System.out.println("Deposited: "+a);}
 static void wdr(double a)throws Exception{if(a>b)throw new Exception("Insufficient balance"); b-=a;
System.out.println("Withdrawn: "+a);}
 static void chk(){System.out.println("Balance: "+b);}
 public static void main(String[]x){
  Scanner s=new Scanner(System.in);
  while(true){
   System.out.println("1.Deposit 2.Withdraw 3.Balance 4.Exit");
   int c=s.nextInt();
   try{
```

```
   if(c==1) dep(s.nextDouble());
   else if(c==2) wdr(s.nextDouble());
   else if(c==3) chk();
   else System.exit(0);
  }catch(Exception e){System.out.println(e.getMessage());}
 }
}
}
```

Problem 6

```
import java.util.*;
public class Salary {
 static double hra(double s){return s*0.1;}
 static double da(double s){return s*0.08;}
 static double pf(double s){return s*0.05;}
 static double gross(double s){return s+hra(s)+da(s)-pf(s);}
 public static void main(String[]a){
  Scanner s=new Scanner(System.in);
  try{
   double b=s.nextDouble();
   if(b<0) throw new Exception("Invalid salary");
   System.out.println("HRA:"+hra(b)+"\nDA:"+da(b)+"\nPF:"+pf(b)+"\nGross:"+gross(b));
  }catch(Exception e){System.out.println(e.getMessage());}
 }
}
```

Problem 7

```
import java.util.*;
public class Discount{
 static double disc(double b,String t){
  if(t.equalsIgnoreCase("Silver")) return b*0.05;
```

```
 else if(t.equalsIgnoreCase("Gold")) return b*0.1;
 else if(t.equalsIgnoreCase("Platinum")) return b*0.15;
 else return 0;
}
 public static void main(String[]a){
  Scanner s=new Scanner(System.in);
  double b=s.nextDouble();
  s.nextLine();
  String t=s.nextLine();
  double d=disc(b,t);
  System.out.println("Discount:"+d+"\nNet:"+ (b-d));
 }
}
```

Problem 8

```
import java.util.*;
public class Stock{
 public static void main(String[]a){
  Scanner s=new Scanner(System.in);
  int n=s.nextInt();
  String nms[]=new String[n]; double p[]=new double[n]; int q[]=new int[n];
  for(int i=0;i<n;i++){ nms[i]=s.next(); p[i]=s.nextDouble(); q[i]=s.nextInt(); }
  double t=0;
  for(int i=0;i<n;i++){
   try{
    if(q[i]==0) throw new Exception(nms[i]+" out of stock");
    t+=p[i]*q[i];
   }catch(Exception e){ System.out.println("Error: "+e.getMessage()); }
  }
  System.out.println("Total stock value: "+t);
```

```
 }
}
```