Exercise 10. Answer Sheet

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Problem 1. (40 points) Consider a 4-queens problem: On a 4x4 chess board put 4 queens in such way that they don't attack each other.

a) (20 points) How many solutions are there? There are **2** solutions.

b) (20 points) Draw your solutions using 4x4 table and put Q at the queen positions.

	Q		
			Q
Q			
		Q	

		Q	
Q			
			Q
	Q		

Problem 2. (60 points) Write a program implementing the 8-queens problem. Upload your code. Using your program answer the following questions?

a) (30 points) How many solutions are there? There are **92** solutions.

b) (30 points) Draw one of the solutions in the table below.

							Q
			Q				
Q							
		Q					
					Q		
	Q						
						Q	
				Q			

<How to compile/run>
Commands:
javac EightQueensProblem.java
java EightQueensProblem
By executing the program like above, you can see all the solutions.

```
std6dc27{s1240234}56: javac EightQueensProblem.java
std6dc27{s1240234}57: java EightQueensProblem
Solution 1:
Q * * * * * * *
* * * * Q * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
* * * * * * Q *
* Q * * * * * *
* * * Q * * * *

Solution 2:
Q * * * * * * *
* * * * * Q * *
* * * * * * * Q
* * Q * * * * *
```

…(omitted)

```
* * * * * * Q *
* * * Q * * * *

Solution 92:
* * * * * * * Q
* * * Q * * * *
Q * * * * * * *
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
* * * * Q * * *

The number of solutions: 92
std6dc27{s1240234}58:
```