Lab4

1. RSM

The attached *RSM* matlab file is an example of the how to use matlab solve to the RSM problem. Please use the same structure to solve the following function.

$$f = 3*x1^2-10*x2^2+2*x1*x2-6*x1+8$$

$$\text{test points } (X1=8, X2=8)$$

2. Expensive function evaluations

Compare the optimization time of using fmicon and GA. The expensive function is given as

```
f = exp(x(1)) * (x(3)^2 + 2*x(4)^2 + 4*x(1)*x(3)*x(2) + 5*x(2) + 1)
```

The constraint is given as

```
c = [x(1)*x(2)*x(3) – x(1) – x(2) – x(3)–x(4) + 8]
```

Please see the first two examples in the link below:

https://www.mathworks.com/help/gads/minimizing-an-expensive-optimization-problem-using-parallel-computing-toolbox.html

Then, modify the *expensive_objfun* and *expensive_confun*, and run *GA* and *fmincon*, to get the two running times and compare them.

Upload your matlab files (one for Pr1, four for Pr2) and put the result screenshots in a PDF file, thank you!