 Name _____ ID _____

Exercise 4 (16 points) – individual work

- The answers can be typed or handwritten (handwriting must be clear and readable), in this exercise sheet or your own sheet (put your name & ID at the top of the sheet). All answers must be saved to only 1 PDF file.
- Some questions also require the submission of processes/workflows (file.rmp or file.ipynb).
- In case of re-submission (after first grading) or submission after solution is given, your points will be weighted by 0.5.

Two classifiers are used to classify 60 customer records whether they would buy sedan, pickup, or SUV. Their confusion matrices are

Classifier 1

	Predicted Sedan	Predicted Pickup	Predicted SUV
Actual Sedan	15	4	5
Actual Pickup	4	14	2
Actual SUV	3	3	10

Classifier 2

	Predicted Sedan	Predicted Pickup	Predicted SUV
Actual Sedan	18	3	3
Actual Pickup	3	10	7
Actual SUV	6	2	8

Answer all questions except (2.7) and (3.7) in 4 decimal places.

1. (Total 2 points) Consider overall performance.

1.1 Overall accuracy of classifier 1 =	1.2 Overall accuracy of classifier 2 =

2. (Total 7 points) Consider performance of predicting class **Sedan**.

2.1 Precision of classifier 1 =	2.4 Precision of classifier 2 =
2.2 Recall of classifier 1 =	2.5 Recall of classifier 2 =
2.3 F-measure of classifier 1 =	2.6 F-measure of classifier 2 =

2.7 By considering only precision, recall, and F-measure in (2.1)-(2.6), which classifier is better at predicting Sedan?

 Name _____ ID _____

3. (Total 7 points) Consider performance of predicting class **Pickup**

3.1 Sensitivity of classifier 1 =	3.4 Sensitivity of classifier 2 =
3.2 Specificity of classifier 1 =	3.5 Specificity of classifier 2 =
3.3 Youden's J index of classifier 1 =	3.6 Youden's J index of classifier 2 =

3.7 By considering only sensitivity, specificity, and Youden's J index in (3.1)-(3.6), which classifier is better at predicting Pickup?