

2020W A33 Midterm Remark Guidelines

[Q1a]

-marks deducted based on AA

[Q1b]

-marks deducted based on AA

[Q1c]

-2 marks for finding inverse based on adjoint

-2 marks for finding determinant

-note, if you used row reduction, marks deducted based on AA

[Q1d]

-1 mark, setup of $PC = CP$

-2 marks, matrix mult. of PC & CP

-2 marks, finding relationships

[Q2a]

-you should get at least half if you used correct row reduction logic

-marks deducted based on AA

[Q2b]

-3 marks, finding $\det(xA)$

-2 marks, subbing in $\det(xA)$ into given function, solve for x

[Q3]

-1 mark, feasible region is empty, std, bounded, therefore we can use FTLP thm where min and max must exist

-8 marks, diagram + calculation of lines for diagram + calculation for corner pts

-4 marks, finding Z value for each corner point

-2 marks, state max and min, and coordinates

[Q4]

-8 marks, matrix row reduction

-4 marks, $X_1, X_2, \dots, X_6 = \dots$ while clearly showing there are multiple solutions

[Q5]

-2 marks, objective function

-3 marks, constraints

-4 marks, diagram, showing the feasible region

-4 marks, finding Z value for each corner point

-3 marks, stating answer for min, and coordinates

[Q6]

-2 marks, finding $A + tI$

-1 mark, finding determinant of $A+tI$

-3 marks, using cramer's rule to find y_1

-3 marks, using cramer's rule to find y_2

-1 mark, restrictions t cannot equal -1, -2

[Q7]

-2 marks, applying matrix inverse identity property, ie. $AA^{-1} = I$

-1 mark, expansion after applying property

-3 marks, demonstrating $A = I \dots I$ & deriving $nA = A^2$

-1 mark, subbing in $nA = A^2$ and then simplifying

-1 mark, final answer