

MAU11S02 Group A2 Quiz 03 3pm 13/2/19 ANSWERS

Rules and procedures.

1. Answers must be handed up at the end of the tutorial, no other time. **2.** Attempt 3 questions. Only *your first three answers* will be marked. **3.** Each question carries 20 marks, so the maximum quiz mark is 60. **4.** Marked quizzes will be returned, and answers published, the following week. **5.** If a particular method of solution is stipulated, you get no marks if you don't use it. **6.** The (9) quizzes will contribute 20% to your overall mark. **7.** You are allowed to collaborate and compare answers during the tutorial.

Answer 1.

$$\begin{array}{ccc}
 2 & 7 & 1 \\
 8 & 2 & 8 \\
 2 & 8 & 4 \\
 \\
 2 & 7 & 1 \\
 0 & -26 & 4 \\
 0 & 1 & 3 \\
 \\
 2 & 7 & 1 \\
 0 & -26 & 4 \\
 0 & 0 & 41/13 \text{ no swaps}
 \end{array}$$

$\det = (-4) * 41 = -164.$

Answer 2.

(2,1) minor -8, (2,2) minor 4

Answer 3.

(2,3) minor 6, (2,4) minor -6
 Determinant

$$\begin{aligned}
 & -(-1)(-8) + (-3)(4) - (2)(6) + (-4)(-6) \\
 & = -8 - 12 - 12 + 24 = -8.
 \end{aligned}$$

Answer 4.

-2	-2	4	-8
-1	-3	2	-4
2	5	-4	10
1	1	-1	3

-2	-2	4	-8
0	-2	0	0
0	3	0	2
0	0	1	-1

-2	-2	4	-8
0	-2	0	0
0	0	0	2
0	0	1	-1

swap
 swap

-2	-2	4	-8
0	-2	0	0
0	0	1	-1
0	0	0	2

Determinant 8; 1 swap, original determinant -8;

Answer 5.

1	3	6	2	=R1
-3	-7	-16	0	+3*R1
3	12	21	15	-3*R1
0	1	1	3	

1	3	6	2	-3*R2
0	2	2	6	*(1/2) =R2
0	3	3	9	-3*R2
0	1	1	3	-1*R2

1	0	3	-7
0	1	1	3
0	0	0	0
0	0	0	0

in rref

The first 3 are linearly dependent,
and the fourth depends on them.