

MAU11S02 Group A2 Quiz 08 3pm 27/3/19 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 10 marks, so the maximum quiz mark is 30. **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. **8. *Show all work.*** No marks will be given for answers which do not show the calculations.

Answer 1.

(i)	(1,1)	(1,2)	(1,3)		
	(2,1)	(2,2)	(2,3)		
	(3,1)	(3,2)	(3,3)		
(ii)					
k	2	3	4	5	6
Prob(k)	1/9	2/9	3/9	2/9	1/9

Answer 2. (i) $E : 3/5, F : 10/25, E \cap F : 6/25$. (ii) $E \cap F : 6/25$, yes, it is the product of probabilities.

Answer 3.

$E_3 : (1, 1, 1)$.

$E_4 : (1, 1, 2), (1, 2, 1), (2, 1, 1)$.

$E_5 : (1, 1, 3), (1, 2, 2), (1, 3, 1), (2, 1, 2), (2, 2, 1), (3, 1, 1)$

$E_6 : (1, 2, 3), (1, 3, 2), (2, 1, 3), (2, 2, 2), (2, 3, 1), (3, 1, 2), (3, 2, 1)$

$E_7 : (1, 3, 3), (2, 2, 3), (2, 3, 2), (3, 1, 3), (3, 2, 2), (3, 3, 1)$

$E_8 : (2, 3, 3), (3, 2, 3), (3, 3, 2)$

$E_9 : (3, 3, 3)$

3	4	5	6	7	8	9
$\frac{1}{27}$	$\frac{3}{27}$	$\frac{6}{27}$	$\frac{7}{27}$	$\frac{6}{27}$	$\frac{3}{27}$	$\frac{1}{27}$

Answer 4.

	A	B
$\text{prob}(X)$	0.3333	0.6667
$\text{prob}(D X)$	0.0500	0.1500
Prob defective 0.1167		
$\text{prob}(X D)$	0.1429	0.8571

Answer 5.

	A	B	C	D
$\text{prob}(X)$	0.1000	0.2000	0.3000	0.4000
$\text{prob}(E X)$	0.0500	0.1000	0.1000	0.0500
Prob defective 0.0750				
$\text{prob}(X E)$	0.0667	0.2667	0.4000	0.2667