## AQA – Chi squared test for association – A2 Further Mathematics Statistics

1. June/2020/Paper\_3/No.8

Ray is conducting a hypothesis test with the hypotheses

H<sub>0</sub>: There is no association between time of day and number of snacks eaten

H<sub>1</sub>: There is an association between time of day and number of snacks eaten

He calculates **expected** frequencies correct to two decimal places, which are given in the following table.

Number of snacks eaten

		0	1	2 or more
Time of Day	Day	23.68	21.05	5.26
Time of Day	Night	21.32	18.95	4.74

Ray calculates his test statistic using  $\sum \frac{(O-E)^2}{E}$ 

(a)	State, with a reason, the error Ray has made and describe any changes R need to make to his test.		
	need to make to mo test.	[3 marks]	

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b)	Having made the necessary corrections as described in part (a), the correct value of the test statistic is 8.74		
	Complete Ray's hypothesis test using a 1% level of significance.  [3 mark]	[3 marks]	
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2.

June/201	L9/Paper_3/No.6			
	During August, 102 candidates took their driving test at centre A and 60 passed.			
	During the same month, 110 candidates took their driving test at centre <i>B</i> and 80 passed.			
(a)	Test whether the driving test result is independent of the driving test centre using the			
	5% level of significance.  [8 marks			

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(b)	Rebecca claims that if the result of the test in part (a) is to reject the null hypothesis then it is easier to pass a driving test at centre B than centre A.			
	State, with a reason, whether or not you agree with Rebecca's claim.	[1 mark		