

# COMP111 - Exercise 8 Answers

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1. (a) The joint probability distribution of  $\mathbf{P}(\text{Country}, \text{Mothertongue})$  is represented by the following table where Country = C and Mother-tongue = Mt:

	C = Eng	C = Scot	C = Welsh
Mt = Eng	0.836	0.056	0.024
Mt = Scot	0.0352	0.024	0.0
Mt = Welsh	0.0088	0	0.016

- (b) You can sum the rows from the table to give:

$$\mathbf{P}(\text{Mothertongue}) = (0.916, 0.0592, 0.0248)$$

where Mothertongue takes the values Eng, Scot and Welsh.