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08	9a	It is estimated that 85% of students in Australia own a mobile phone. (i) Two students are selected at random. What is the probability that neither of them owns a mobile phone? (ii) Based on a recent survey, 20% of the students who own a mobile phone have used their mobile phone during class time. A student is selected at random. What is the probability that the student owns a mobile phone and has used it during class time?	2 1
<p>i. $P(\text{not have a mobile}) = 1 - 0.85$ $= 0.15$ $P(2 \text{ people without mobile}) = (0.15)^2$ $= 0.0225$</p> <p>ii. $P(\text{mobile and used in class}) = 0.85 \times 0.2$ $= 0.17$</p>			

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by the Board of Studies

Board of Studies: Notes from the Marking Centre

- (i) In better responses, candidates recognised that the complement of 85% was required in this part and many then went on to successfully find the correct numerical expression. A common error was in the use of the complement, for example, $1 - 0.85^2$. A significant number of candidates could not calculate the final answer, especially when fractions were involved. Responses containing a tree diagram almost always gained at least one mark.
- (ii) Many candidates were able to find the correct answer, however a significant number then continued to do a further calculation, most commonly 0.17×0.85 , indicating that they had misunderstood the question.

Source: http://www.boardofstudies.nsw.edu.au/hsc_exams/