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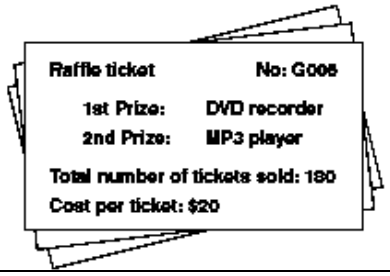
|---|---|---|---|
| **06** | **25 c** | Sonia buys three raffle tickets.<br>(i) What is the probability that Sonia wins first prize?<br>(ii) What is the probability that she wins both prizes?<br>  | **1**<br><br>**2** |

(i) Sonia buys 3 tickets out of the 180.

$$\text{P(wins first prize)} = \frac{3}{180} = \frac{1}{60}$$

(ii) $$\text{P(wins both prizes)} = \frac{3}{180} \times \frac{2}{179} = \frac{1}{5370}$$

* 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) Many candidates were successful in this part.

(ii) The majority of candidates had difficulty gaining full marks in this part. Many candidates knew to reduce the numerator and denominator of their answer in part (i) but were unsure how to combine this with the information from part (i). Tree diagrams were frequently drawn but were often incorrect. Some candidates were not careful enough in differentiating addition and multiplication signs. Those candidates who did not draw tree diagrams often gave incorrect answers such as $\frac{2}{179}$, $\frac{3}{180} \times \frac{3}{180}$, or $\frac{3}{180} + \frac{2}{179}$.

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