# 4.5 Probability concept\_expected numbers\_P\_1

**1a.** *[4 marks]*

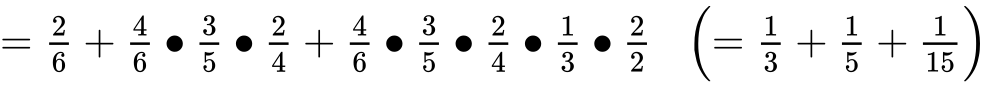
## Markscheme

\* This question is from an exam for a previous syllabus, and may contain minor differences in marking or structure.

probability that Darren wins      ***(M1)***

**Note:** Only award ***M1*** if three terms are seen or are implied by the following numerical equivalent.

**Note:** Accept equivalent tree diagram for method mark.

     ***A2***

**Note:     *A1*** for two correct.

     ***A1***

***[4 marks]***

**1b.** *[3 marks]*

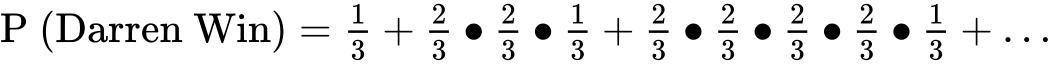
## Markscheme

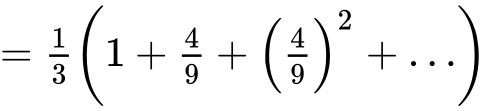
**METHOD 1**

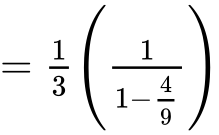
the probability that Darren wins is given by

     ***(M1)***

**Note:** Accept equivalent tree diagram with correctly indicated path for method mark.



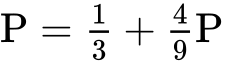
or      ***A1***

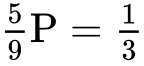
     ***A1***

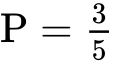
     ***AG***

**METHOD 2**



     ***M1A2***



     ***AG***

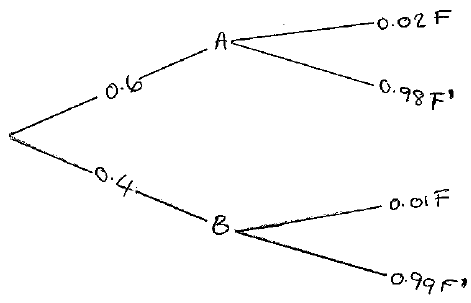
***[3 marks]***

***Total [7 marks]***

**2a.** *[6 marks]*

## Markscheme

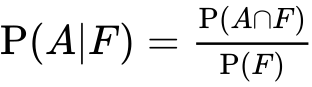
\* This question is from an exam for a previous syllabus, and may contain minor differences in marking or structure.

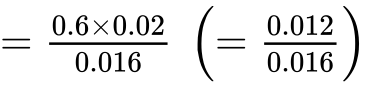
(i)  
     ***A1A1***

**Note:**     Award ***A1***for a correctly labelled tree diagram and ***A1***for correct probabilities.

(ii)          ***(M1)***

     ***A1***

(iii)     

     ***M1***

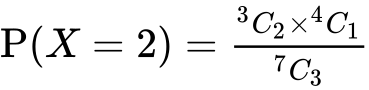
     ***A1***

***[6 marks]***

**2b.** *[6 marks]*

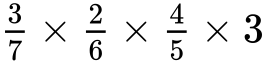
## Markscheme

(i)     **METHOD 1**

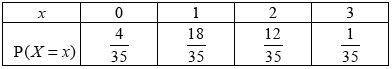
     ***(M1)***

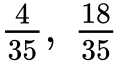
     ***A1***

**METHOD 2**

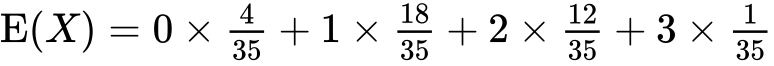
     ***(M1)***

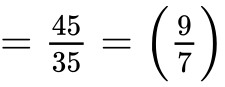
     ***A1***

(ii)          ***A2***

**Note:**     Award ***A1*** if  or  is obtained.

(iii)     

     ***M1***

     ***A1***

***[6 marks]***

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