HIGHER

8.11 Probability Equation Questions: 10-minute Pack

Total Marks

EDEXCEL 1MA1 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A bag contains x green counters and 3 yellow counters. The probability of drawing a green counter is 1/2. Write down the value of x.

(Total for Question 1 is 1 mark)

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2 A bag contains m green counters and 1 purple counter. The probability of drawing green is 3/4. Find m.

(Total for Question 2 is 2 marks)

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3 A jar contains red, blue and yellow sweets. The probability of drawing red is $(2x)/(5x + 3)$ and this equals 1/3. Solve for x.

(Total for Question 3 is 3 marks)

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4 There are x black buttons and 4 white buttons in a box. Two buttons are taken at random without replacement. The probability both are white is 2/5. Find x.

(Total for Question 4 is 3 marks)

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Mark scheme · 8.11 Probability Equation Questions: 10-minute Pack

Question 1

x = 3 cao	**B1**

Answer: 3

Question 2

form m/(m + 1) = 3/4 or equivalent	**M1**
m = 3 cao	**A1**

Answer: 3

Question 3

form 2x/(5x + 3) = 1/3 or equivalent	**M1**
cross-multiply and rearrange correctly	**M1**
x = 3 cao	**A1**

Answer: 3

Question 4

form 4/(x + 4) * 3/(x + 3) = 2/5 or equivalent	**M1**
multiply out to get (x+4)(x+3) = 30, i.e. x^2 + 7x - 18 = 0, and factorise/solve	**M1**
x = 2 cao (reject x = -9)	**A1**

Answer: 2

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