

**Revision Questions – Basic Probability****Question 1**

If for two events  $C$  and  $D$ ,  $\Pr(C) = 0.41$ , and  $\Pr(C \cap D) = 0.28$ , and  $\Pr(C \cup D) = 0.73$ , then  $\Pr(D)$  is closest to

- A** 0.04
- B** 0.86
- C** 0.32
- D** 0.60

**Answer: D**

**Question 2**

A bag contains  $x$  blue marbles and 1 red marble. Two marbles are drawn **without replacement**. The probability that both marbles are blue is

- A**  $\frac{x}{(x+1)^2}$
- B**  $\frac{x-1}{x+1}$
- C**  $\frac{x}{x+1}$
- D**  $\frac{2x}{x+1}$

**Answer: B**

Answer all questions on the lines provided. For questions worth multiple marks, working must be shown. Unless specified, all answers should be exact values.

### Question 3

In a probability experiment,  $\Pr(A) = 0.4$ ,  $\Pr(B) = 0.5$  and  $\Pr(A \cup B) = 0.6$ .

- a) Find  $\Pr(A \cap B)$ . [0.3]

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- b) Use the information above to complete the probability table below.

	$\Pr(A)$	$\Pr(A')$	
$\Pr(B)$			0.5
$\Pr(B')$			
	0.4		

- c) Briefly explain whether events  $A$  and  $B$  are **independent** or not. [No]

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**Question 4**

A manager at a café recorded the sales of drinks in the morning. She found that 80% of customers ordered a hot beverage. If 12% of **all customers** order hot tea and 14% of **all customers** order a cold juice,

- a) What is the probability of ordering a hot tea OR a cold juice? [0.26]

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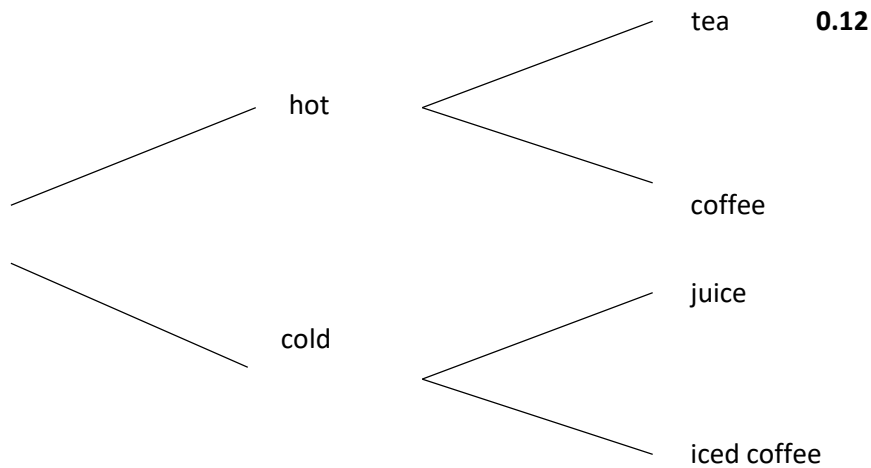
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- b) Complete the tree diagram below with probabilities labelled to show all the possible drink outcomes.



- c) Assuming a customer orders only one drink, find the probability that a customer orders a coffee flavoured drink. [0.74]

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**Question 5**

There were 150 people at a garden party and everyone had a cup of tea. Now 70 people took milk in their tea, 100 took sugar, but 30 took neither. Represent the information in a Venn diagram

What is the probability that a random selected people

(a) took both milk and sugar?  $\left[\frac{1}{3}\right]$

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(b) took milk but not sugar?  $\left[\frac{2}{15}\right]$

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(c) took milk if it is known that he/she took sugar?  $\left[\frac{1}{2}\right]$

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