



IBMYP Standard Maths Sample Paper 3



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IB MYP E Assessment Math Paper 3

Instructions

- The on-screen examination has not yet started.
- Your time will begin once you have clicked the Start button below. Do not click Start until instructed to do so.
- Before the examination begins you are given 5 minutes to become familiar with its structure. Please navigate around the examination, taking note of the length of each task and question. You have 2 hours to complete the examination.
- There are 10 separate questions in this examination. Each question may have sub-parts. Answer all the questions in the response boxes provided. The maximum mark for this examination is 100 marks.
- As you progress through the questions, your answers are automatically saved.
- When 2 hours has ended. you will no longer be able to answer any questions.

Question 1: 8 marks

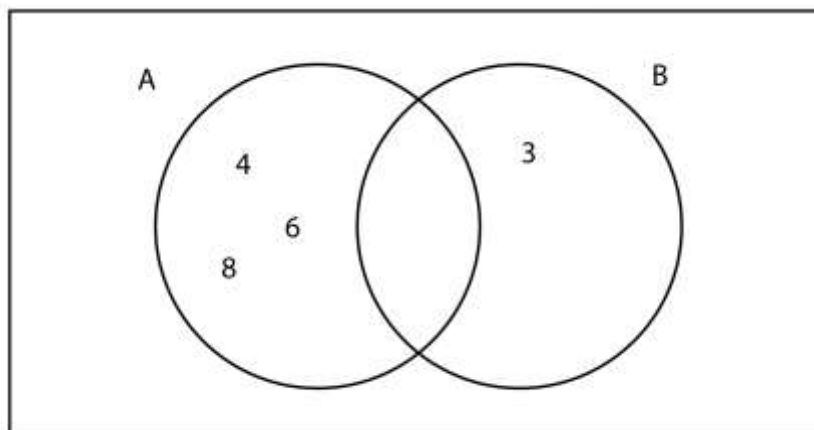
1. There is a universal set T with the following elements:

$\{3,4,5,6,7,8,9,10,11,12,13\}$

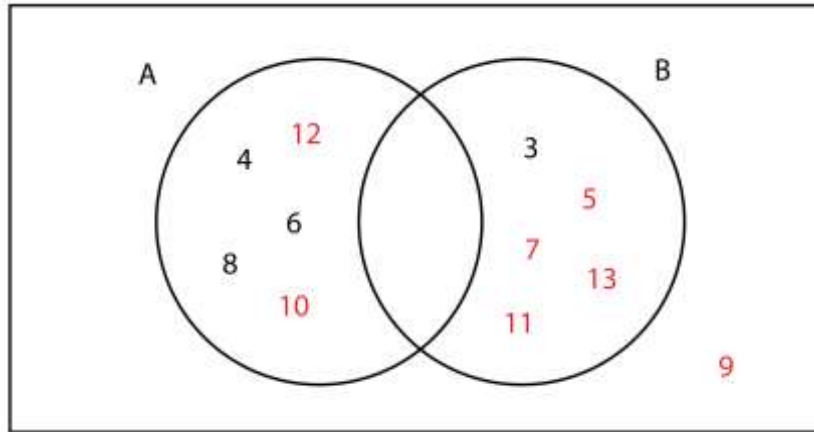
Consider that there are 2 subsets for the universal set T

There is subset A (left) which has only even numbers and subset B (right) that has only prime numbers.

- a. In the given Venn Diagram below, categorize the remaining numbers (1 mark)



Answer:



b. Describe what this means in the above context: $A' \cap B$ (2 marks)

Answer: All prime numbers (subset B) but the even numbers (subset A)

c. 3 numbers are randomly selected from the universal set T. Deduce the probability that all 3 elements of $A' \cap B$ (2 marks)

Answer: $\frac{2}{33}$

$$\frac{5}{11} \times \frac{4}{10} \times \frac{3}{9} = \frac{2}{33} \rightarrow \text{multiplication without replacement}$$

d. 2 numbers are randomly selected from the universal set T. Deduce the probability that only one of them is an element of $A' \cap B$ (3 marks)

Answer: $\frac{5}{11}$

$$\frac{5}{11} \times \frac{5}{10} = \frac{25}{110} \quad (\text{first selected}) \qquad \frac{5}{11} \times \frac{5}{10} = \frac{25}{110} \quad (\text{second selected})$$

$$\frac{25}{110} \times 2 = \frac{50}{110} = \frac{5}{11}$$

Question 2: 6 marks

2. The table below indicates an 'addition' grid.

	+	10	4
Addition grid	2	12	6
	6	16	10



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