Maths
Junior Certificate
Higher Level

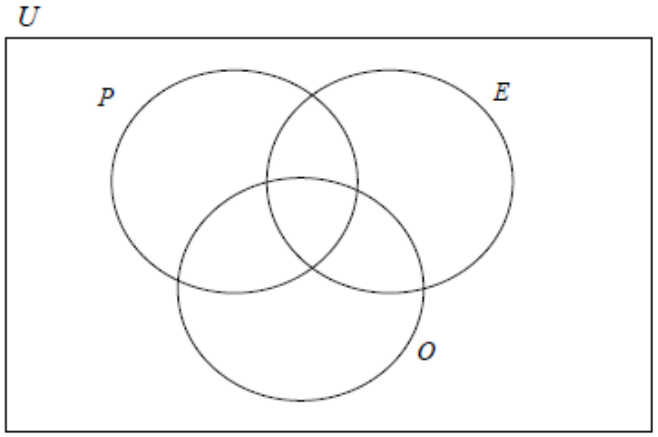
Past Exam Questions on
PM Sets

Q2 2013 Paper 1

Question 2 **(Suggested maximum time: 5 minutes)**

$U = \{1, 2, 3, ..., 12\}$. P is the set of prime numbers less than 12. E is the set of even numbers less than 12. O is the set of odd numbers less than 12.

(a) Represent these sets on the Venn diagram.



(b) Name any set on this diagram (after part **(a)** has been completed) that is a null set.

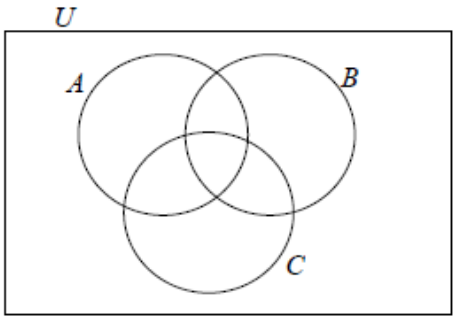
(c) If a number is drawn at random from set ***P***, what is the probability that it is even?

Q13 2013 Paper 1

Question 3 **(Suggested maximum time: 15 minutes)**

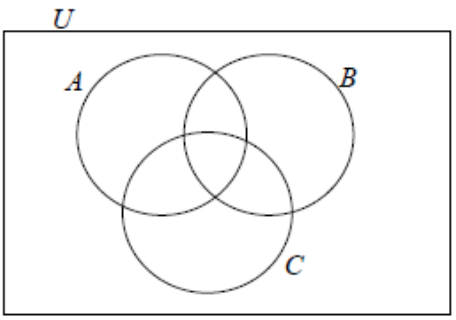
(a) For diagrams **(i)** and **(ii)** below, shade in the named region.

(i)



$A \cap B \cap C$

(ii)



$(A \cap B) \setminus C$

(b) The box on the right contains six statements,
(**note**: P', is the complement of a set P).

A number of the statements are incorrect.

Write down one <u>incorrect</u> statement.

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Statements	
(i)	$A \cup B = B \cup A$
(ii)	$(A \cup B) \cup C = A \cup (B \cup C)$
(iii)	$(A \setminus B) \setminus C = A \setminus (B \setminus C)$
(iv)	$(A \cap B)' = U \setminus (A \cap B)$
(v)	$A \setminus B = B \setminus A$
(vi)	$B \setminus (A \cup C) = (B \cup C) \setminus A \setminus C$

Draw a diagram or give an example to explain your choice.

(c) A group of 38 students were asked if they had ever been to France or Spain.
The number who had been to Spain only was 3 more than the number who had been to both countries.
Twice as many had been to France as Spain.
4 students had not been to either country.

Find how many had been to both countries.