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**Mutually Exclusive & Independent Events - Edexcel Past Exam Questions**

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1. For the events  $A$  and  $B$ ,

$$P(A \cap B') = 0.32, P(A' \cap B) = 0.11 \text{ and } P(A \cup B) = 0.65.$$

- (a) Draw a Venn diagram to illustrate the complete sample space for the events  $A$  and  $B$ . (3)
- (b) Write down the value of  $P(A)$  and the value of  $P(B)$ . (3)
- (c) Determine whether or not  $A$  and  $B$  are independent. (3)

**Jan 06 Q6 (edited)**

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2. (a) Given that  $P(A) = a$  and  $P(B) = b$  express  $P(A \cup B)$  in terms of  $a$  and  $b$  when

- (i)  $A$  and  $B$  are mutually exclusive,
- (ii)  $A$  and  $B$  are independent. (2)

**June 09 Q7 (edited)**

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3. Jake and Kamil are sometimes late for school.  
The events  $J$  and  $K$  are defined as follows

$J$  = the event that Jake is late for school,  
 $K$  = the event that Kamil is late for school.

$$P(J) = 0.25, P(J \cap K) = 0.15 \text{ and } P(J' \cap K') = 0.7.$$

On a randomly selected day, find the probability that

- (a) at least one of Jake or Kamil are late for school, (1)
- (b) Kamil is late for school. (2)

**June 11 Q6 (edited)**

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