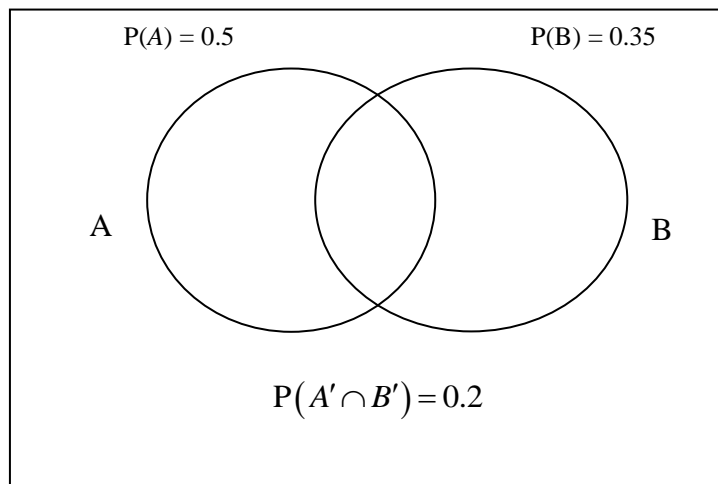


## Section 1: Conditional probability

## Exercise level 2

1. Probabilities relating to the events  $A$  and  $B$  are given in the diagram below:



Find the probability that both  $A$  and  $B$  occur.

2. The number of students selecting English and History is as follows:

	History	Not History	Total
English	9	21	30
Not English	6	14	20
Total	15	35	50

Let  $E$  be the event that the student studies English.

Let  $H$  be the event that the student studies History.

Are  $E$  and  $H$  independent events?

3. A student regularly has to take two train journeys on a Sunday. Over a long period of time she has worked out the probability that the first train is late is 0.4. If the first train is late, the probability that the second train is late is 0.5. If the first train is not late, the probability that the second train is late is 0.3.
- Draw a tree diagram to show the possible outcomes for her next 2 journeys on a Sunday.
  - Using the tree diagram calculate the probability
    - that exactly one journey is on time,
    - that both trains are on time, given that the second journey is on time.
4. Of a group of students studying at a particular college, 56% are male. The probability that a male student is studying maths is  $\frac{1}{5}$  and the probability that a female student is studying maths is  $\frac{1}{11}$ . A student is chosen at random from the college. Find the probability that this student is
- a female student who is studying maths

## Edexcel A level Maths Probability 1 Exercise

- (ii) a student who does not study maths
  - (iii) a male student given that it is a student who is studying maths.
5. In the build up to the Olympics a high jumper measured her success at a particular height. She has a maximum of 3 attempts at this height; once she has jumped successfully she does not jump that height again.
- On 60% of occasions she clears it at the first attempt.
- When she attempts the height for the second time, she is successful in 75% of the attempts.
- When she attempts the height for the third time, she is successful in only 30% of the attempts.
- (i) Draw a tree diagram to show the possible outcomes.
  - (ii) From the tree diagram calculate the probability
    - (A) that she successfully clears the height in her three attempts,
    - (B) that, given she clears the height, that she does so successfully at the first attempt.