

Section 1: Conditional probability

Solutions to Exercise level 1

1. (i) $P(A') = 1 - P(A) = 1 - 0.3 = 0.7$

(ii) $P(B') = 1 - P(B) = 1 - 0.5 = 0.5$

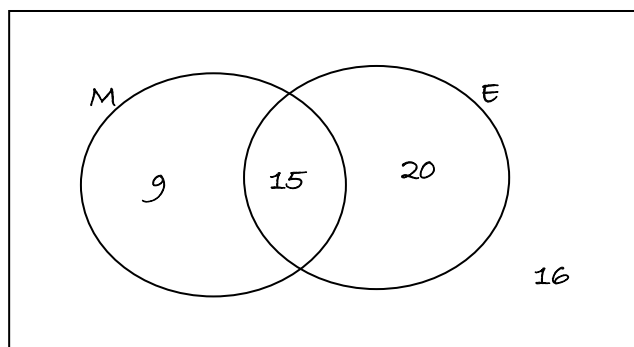
(iii)
$$\begin{aligned} P(A \cup B) &= P(A) + P(B) - P(A \cap B) \\ &= 0.3 + 0.5 - 0.15 \\ &= 0.65 \end{aligned}$$

2. (i)

	Female	Male	Total
Jaguar	15	25	40
Bentley	8	12	20
Total	23	37	60

(ii) $P(J|M) = \frac{P(J \cap M)}{P(M)} = \frac{25}{37}$

3.



There are 24 students who study Maths. Of these, 15 study English.

$$P(E|M) = \frac{15}{24} = \frac{5}{8}$$

4. 5 men and 8 women prefer films, so 13 people prefer films.

$$P(\text{man} | \text{prefer films}) = \frac{5}{13}$$