

13 Andy and Bev are playing a game.

- The game consists of three points.
- On each point, $P(\text{Andy wins}) = 0.4$ and $P(\text{Bev wins}) = 0.6$.
- If one player wins two consecutive points, then they win the game, otherwise neither player wins.

(a) Determine the probability of the following events.

(i) Andy wins the game. **[2]**

(ii) Neither player wins the game. **[3]**

Andy and Bev now decide to play a match which consists of a series of games.

- In each game, if a player wins the game then they win the match.
- If neither player wins the game then the players play another game.

(b) Determine the probability that Andy wins the match. **[3]**