

Sajid is practising for a long jump competition. He counts any jump that is longer than 6 m as a success. On any day, the probability that he has a success with his first jump is 0.2. For any subsequent jump, the probability of a success is 0.3 if the previous jump was a success and 0.1 otherwise. Sajid makes three jumps.

- (a) Draw a tree diagram to illustrate this information, showing all the probabilities. [2]

- (b)** Find the probability that Sajid has exactly one success given that he has at least one success. [5]

[illegible]

On another day, Sajid makes six jumps.

- (c) Find the probability that only his first three jumps are successes or only his last three jumps are successes. [3]

This image shows a full page of white paper with ten horizontal dashed lines, typical of primary school handwriting practice paper. The lines are evenly spaced and extend across the entire width of the page. There is no text or other markings on the paper.