

- 10** Hugo is learning a new game. Each time he plays the game the possible outcomes are that he may win, draw or lose.

The first time Hugo plays the game the probability that

he wins is  $\frac{1}{4}$

he draws is  $\frac{1}{12}$

- (a) Show that the probability that Hugo loses the first game is  $\frac{2}{3}$

(1)

The second time Hugo plays the game the probability that

he wins is  $\frac{3}{5}$

he draws is  $\frac{1}{10}$

he loses is  $\frac{3}{10}$

- (b) Use the information to complete the tree diagram opposite.

(2)

Hugo plays the game twice.

- (c) Find the probability that he draws both of his games.

(2)

Hugo scores points each time he plays.

He scores 3 points if he wins, 2 points if he draws and 1 point if he loses.

After 2 games Hugo has 3 points.

- (d) Find the probability that Hugo lost the first game.

(5)

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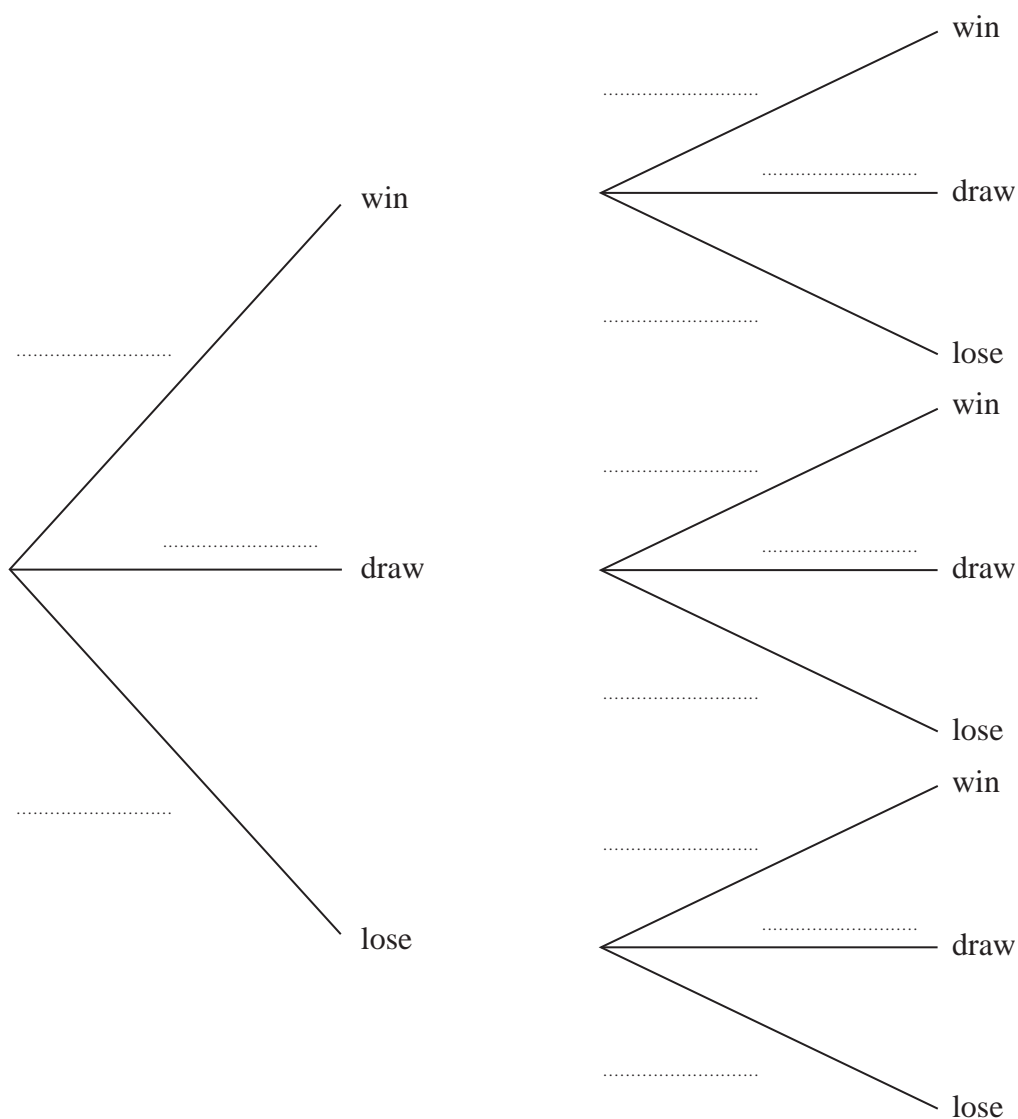
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# Question 10 continued

First game

Second game



Turn over for a spare copy of the tree diagram.



P 7 2 9 1 9 A 0 3 1 4 0

**Question 10 continued**

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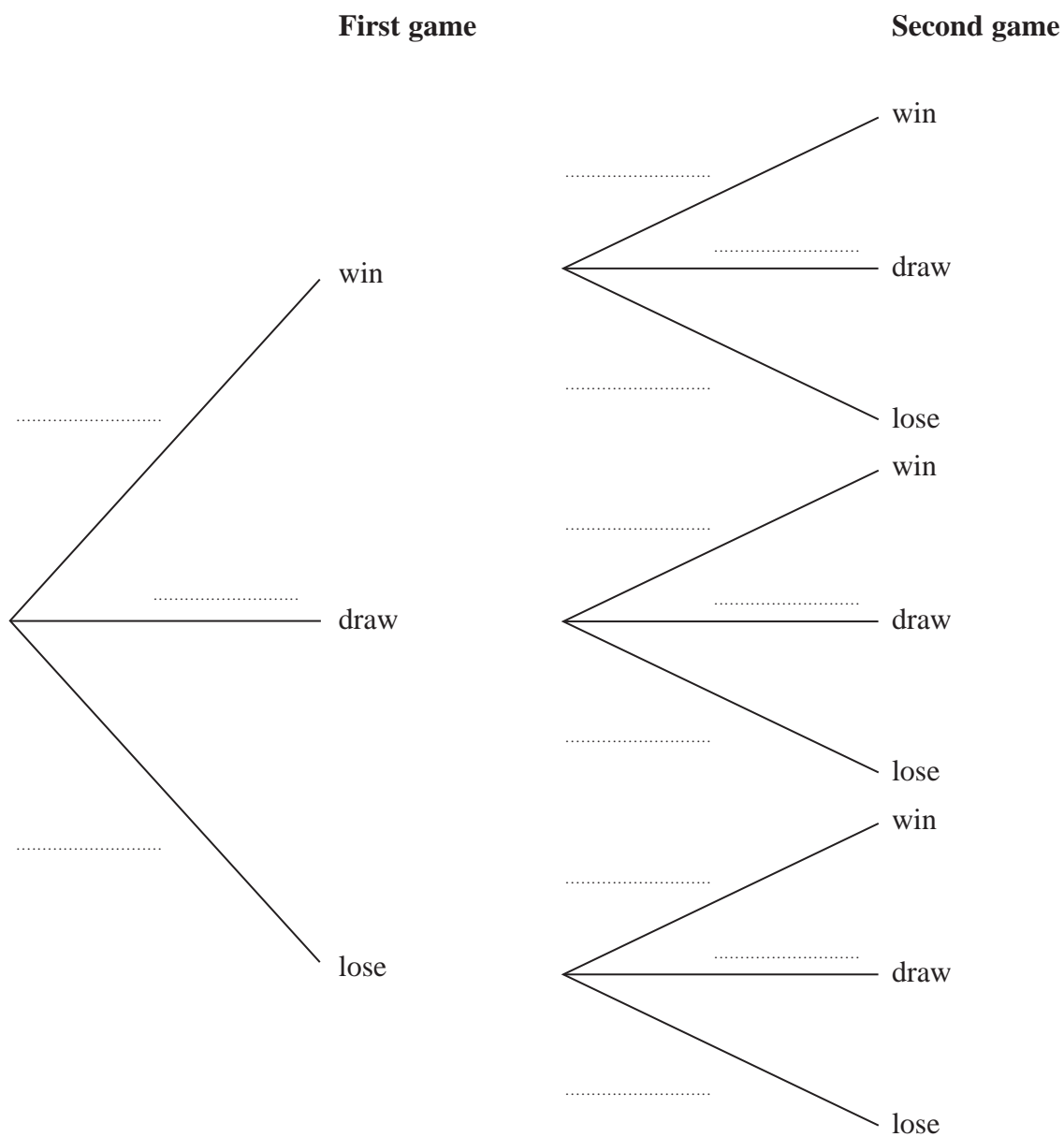
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**Only use this diagram if you need to redraw your tree diagram.**



**(Total for Question 10 is 10 marks)**

