

Tree Diagrams

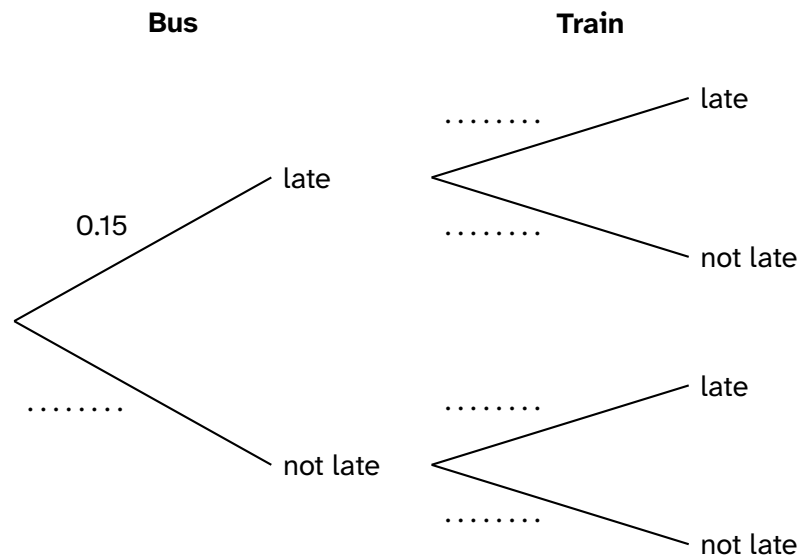
For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1 Kofi travels to college by bus and then by train.
The probability that the bus is late is 0.15
The probability that the train is late is 0.2
The two events are independent.
- (a) Complete the tree diagram.



[2 marks]

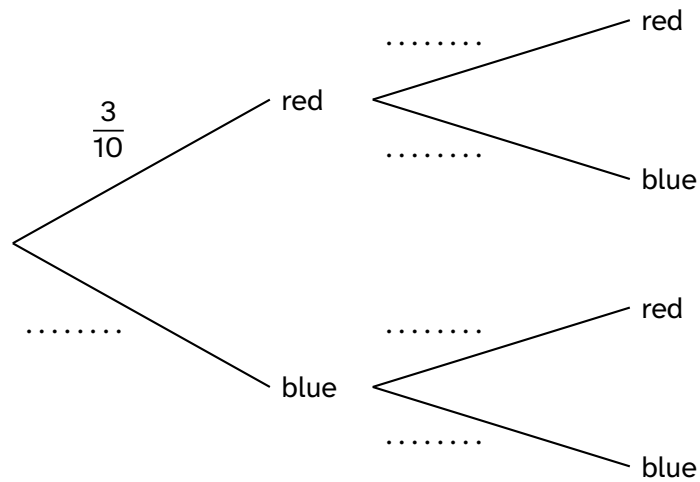
- (b) Work out the probability that neither the bus nor the train is late.

[1 mark]

Answer _____

- 2** A bag contains 3 red counters and 7 blue counters.
A counter is taken at random, its colour is recorded and it is put back.
A second counter is then taken at random.

(a) Complete the tree diagram.



[2 marks]

- (b) Work out the probability that both counters are red.

[2 marks]

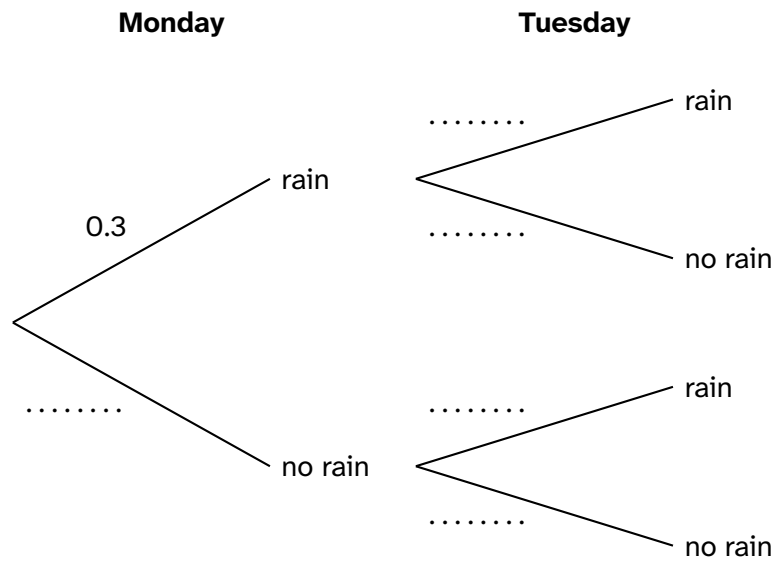
Answer _____

- (c) Work out the probability that the counters are different colours.

[3 marks]

Answer _____

- 3** The probability that it rains on any day is 0.3
 The tree diagram shows the possible outcomes for Monday and Tuesday.
- (a) Complete the tree diagram.



[2 marks]

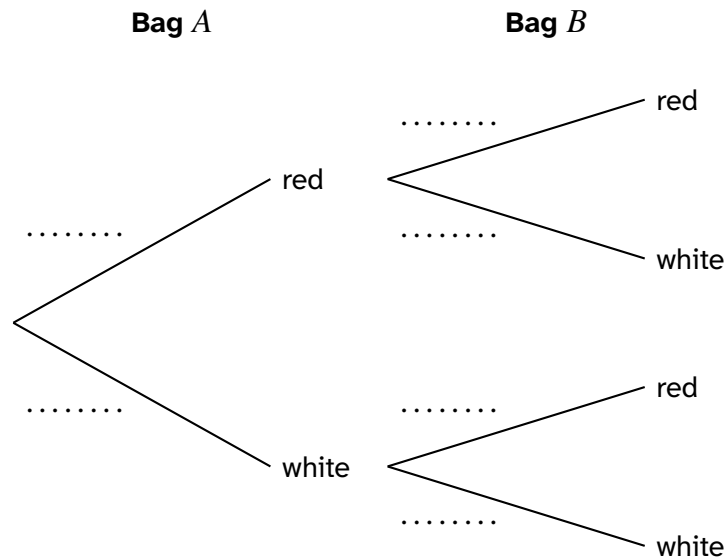
- (b) Work out the probability that it rains on at least one of the two days.

[3 marks]

Answer _____

- 4** Bag A and bag B contain only red counters and white counters.
 $\frac{2}{5}$ of the counters in bag A are red.
 $\frac{1}{4}$ of the counters in bag B are red.
 One counter is taken at random from each bag.

(a) Complete the tree diagram.



[2 marks]

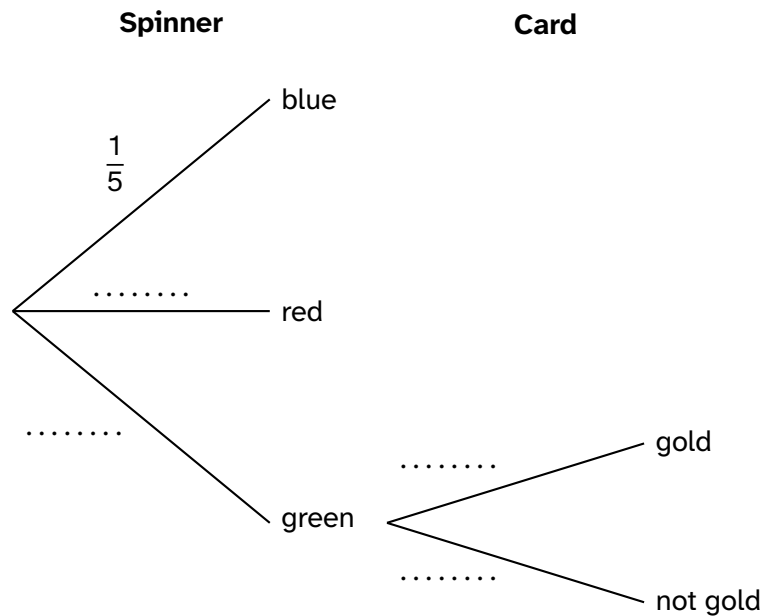
- (b) Work out the probability that one counter is red and one is white.

[2 marks]

Answer _____

- 5** Ines plays a game at a school fair.
 She spins a fair spinner with 5 equal sections: 1 blue, 1 red and 3 green.
 If it lands on blue she wins a prize.
 If it lands on red she does not win a prize.
 If it lands on green she takes a card at random from a pack of 10 cards.
 3 of the 10 cards are gold. If she takes a gold card she wins a prize.

(a) Write the missing probabilities on the tree diagram.



[2 marks]

(b) Work out the probability that Ines wins a prize.

[3 marks]

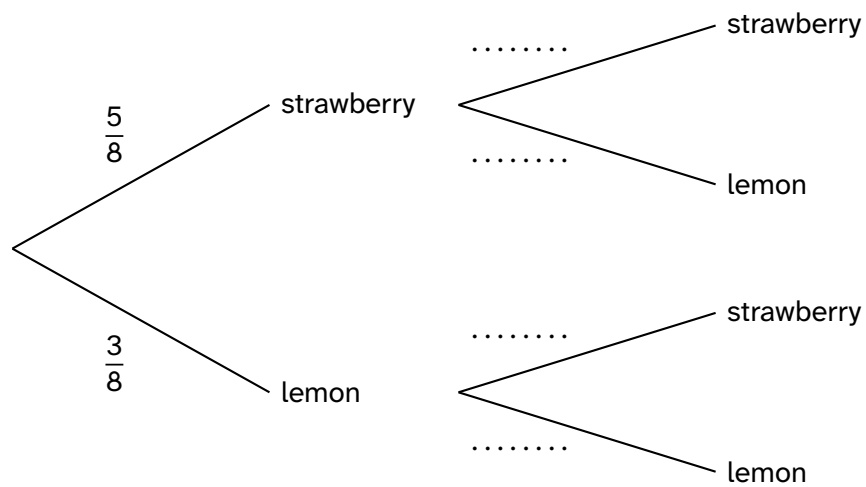
Answer _____

(c) The game is played 200 times.
 Work out an estimate for the number of times a prize is won.

[1 mark]

Answer _____

- 6 A bag has 5 strawberry sweets and 3 lemon sweets.
Jess takes a sweet at random and eats it.
She then takes another sweet at random and eats it.



You may complete the tree diagram to help you.

Work out the probability that the two sweets are the same flavour.

[4 marks]

Answer _____