Probability 2F Assessment

THE ANSWERS

Foundation Level

All questions

Clip	Grade	Title of clip	Question(s)	Marked out of	Score	%
151	4	Simple Tree Diagrams	1	6	___	__
152	4	Sampling Populations	2	5	___	__
153	4	Time Series	3	4	___	__
175	5	Harder Tree Diagrams	4	6	___	__
176	5	Stratified Sampling	5	4	___	__

Out of 25 TOTAL SCORE _____

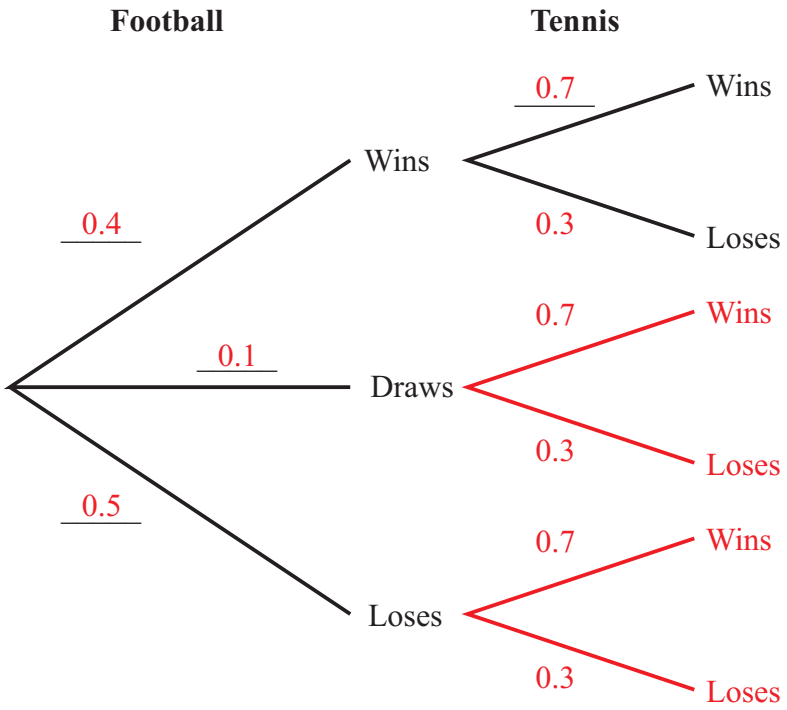
Final Percentage [ ] %

1) Mario plays one game of football with his team, followed by one game of tennis on his own.

The probability that Mario's team wins at football is 0.4 and the probability that they draw is 0.1.

The probability that Mario wins at tennis is 0.7.

a) Complete the probability tree diagram.



3

b) What is the probability that Mario loses at least one game? 0.65 3

12) In Katy's year 7 class there are 32 students. 8 of them have a cat.

There are 1440 students in the school in total.

a) Use this information to estimate the number of students in the school that have a cat. 360 2

b) Ali says that using just Katy's class is not a good sample.

Suggest two ways to improve the sample.

Make the sample bigger. 1

Include students from different year groups. 1

c) Describe a method that Ali could use to select a better sample of students.

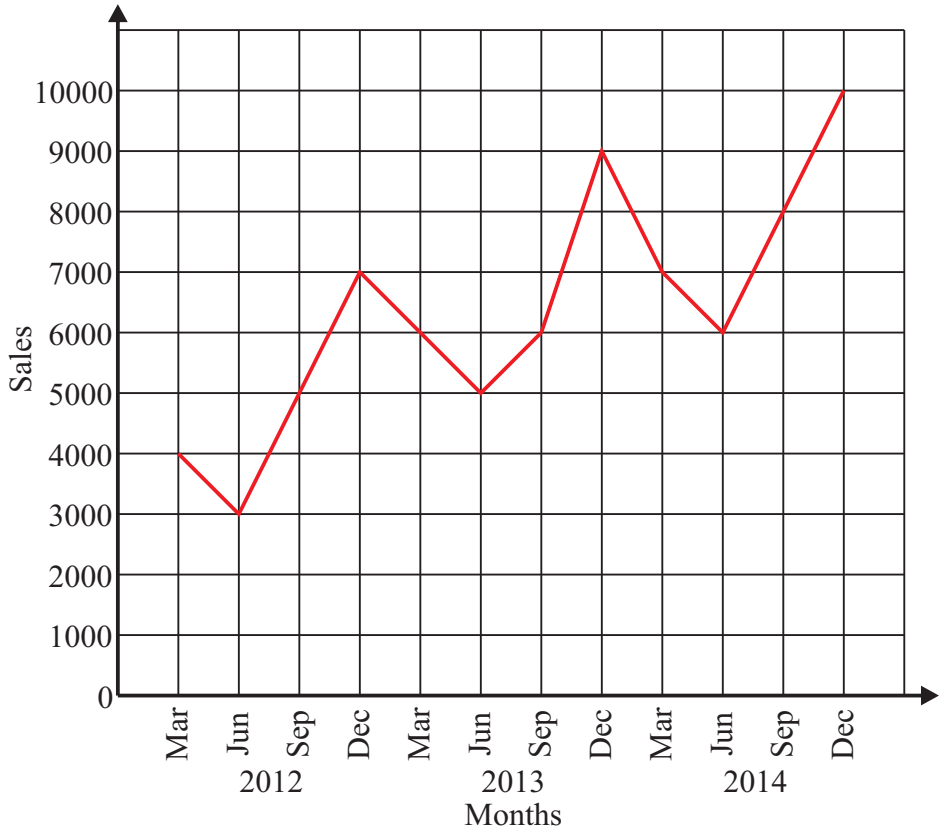
Assign each student in the school a random number and then use a random number generator to pick students, OR put names in a hat and pick some out at random. 1

3) The total sales of mobile phones are recorded every 3 months for 3 years by a phone company.

The results are shown in the table.

Month	Sales (nearest 1000)
March 2012	4000
June 2012	3000
September 2012	5000
December 2012	7000
March 2013	6000
June 2013	5000
September 2013	6000
December 2013	9000
March 2014	7000
June 2014	6000
September 2014	8000
December 2014	10000

a) Draw a time series graph of this data. **3**



b) Comment on the trend.

Upwards trend

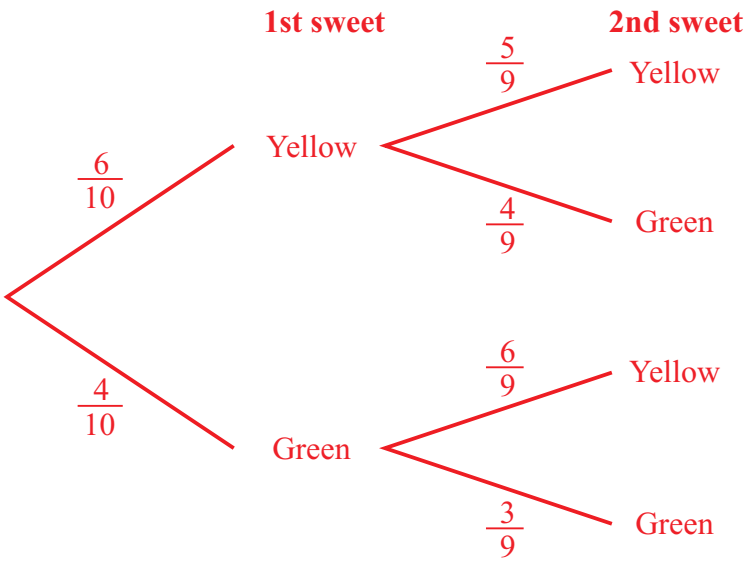
1

4) There are 6 yellow sweets and 4 green sweets in a bag.

Penny takes a sweet, at random, from the bag and eats it.

She then takes another sweet, at random, and eats it.

a) Draw a tree diagram in the space below to show all the possibilities.



3

b) What is the probability that Penny ate two green sweets? $\frac{12}{90}$ 1

c) What is the probability that Penny ate two sweets of the same colour? $\frac{42}{90}$ 2

5) The table gives information about the numbers of students in the two years of a college course.

	Male	Female
First Year	350	705
Second Year	264	216

Phil wants to interview some of the students.

He takes a random sample of 80 students stratified by year and gender.

a) Work out the number of students in the sample who are **female** and in the **first year**.

37 2

b) Work out the number of **male** students in the sample.

32 2