

Name:

Exam Style Questions

## Frequency Trees



Corbettmaths

Equipment needed: Calculator, pen

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

Video 376



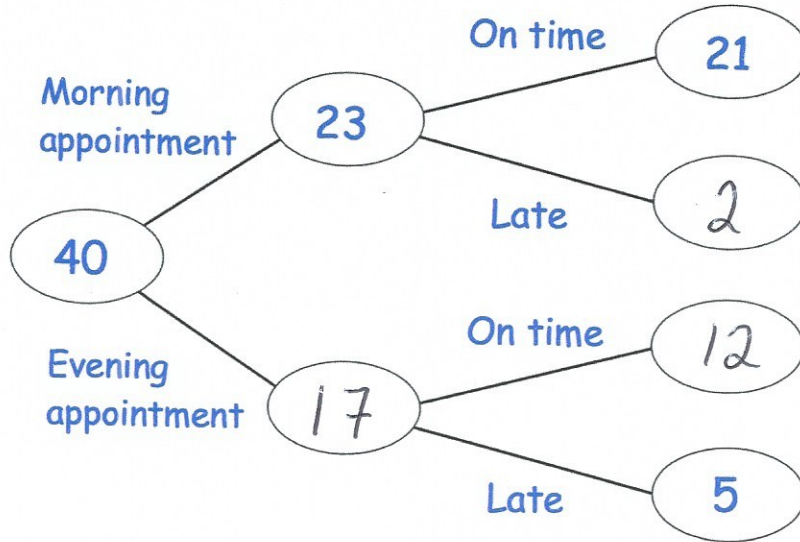
Answers and Video Solutions



1. Over one week, 40 patients visit a dentist.  
The frequency tree shows some information



Complete the frequency tree

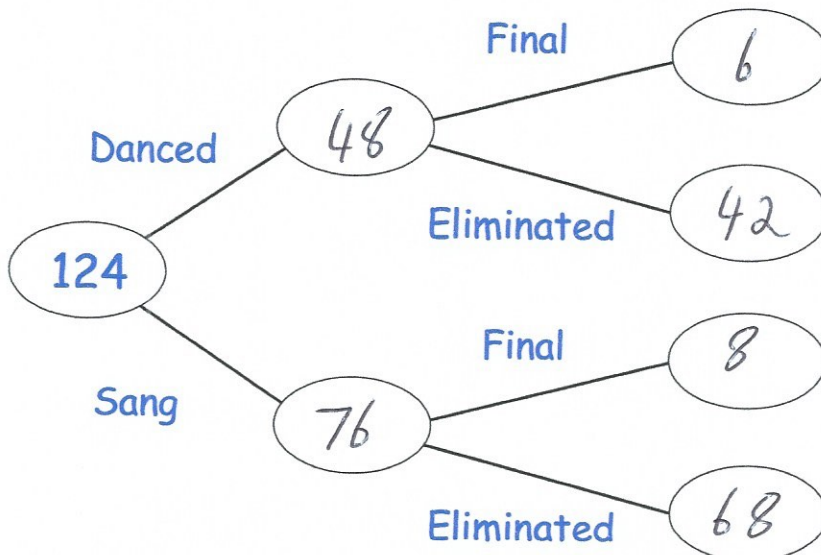


(2)

2. 124 people took part in a talent show.  
Each person either sang or danced.  
76 of the people were singers.  
14 people made it through to the final and the rest were eliminated.  
6 dancers made it through to the final.



Complete the frequency tree



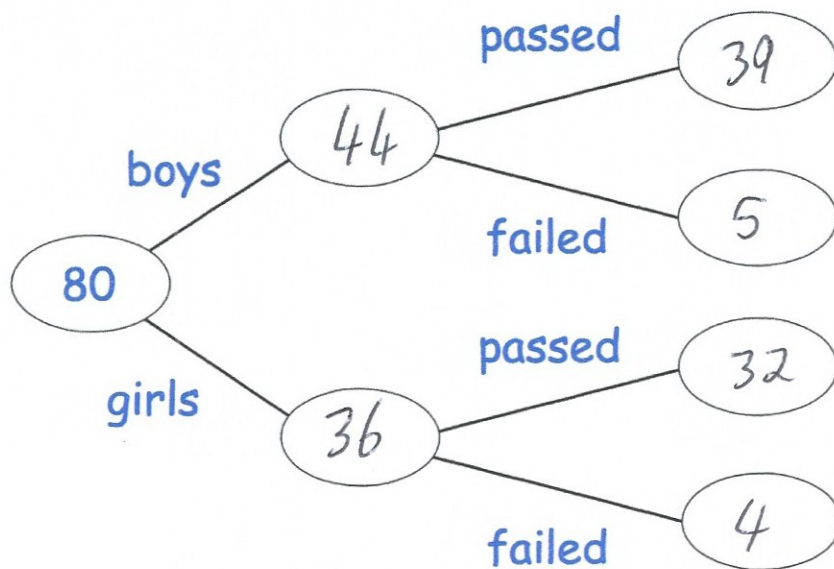
(2)

3. A group of 80 boys and girls sat a test.



36 of the children are girls.  
9 of the 80 children failed the test.  
39 of the boys passed the test.

(a) Use this information to complete the frequency tree.



(3)

One of the boys is chosen at random.

(b) Work out the probability that the boy failed the test.

$$\frac{5}{44}$$

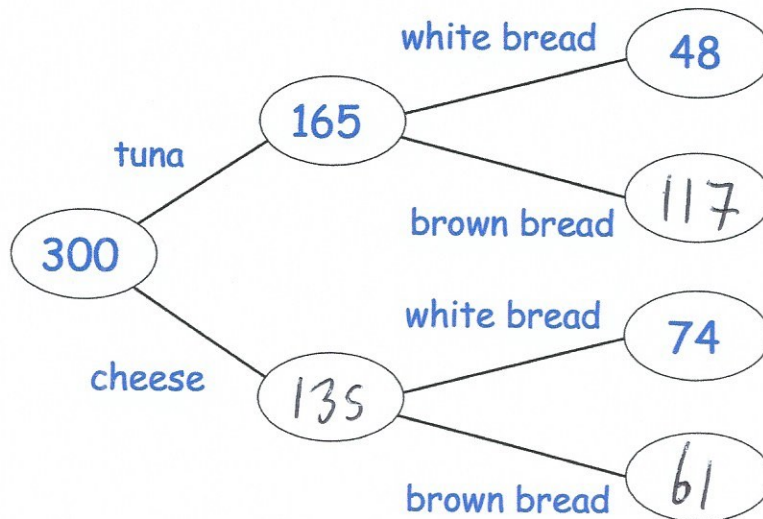
.....

(2)

4.



Shown below is a frequency tree with some information about the types of sandwich at a buffet.



(a) Complete the frequency tree.

(2)

Orla picks a sandwich at random.

(b) Find the probability that the sandwich has been made with brown bread.

$$117 + 61 = 178$$

$$\frac{178}{300}$$

$$\frac{89}{150}$$

.....

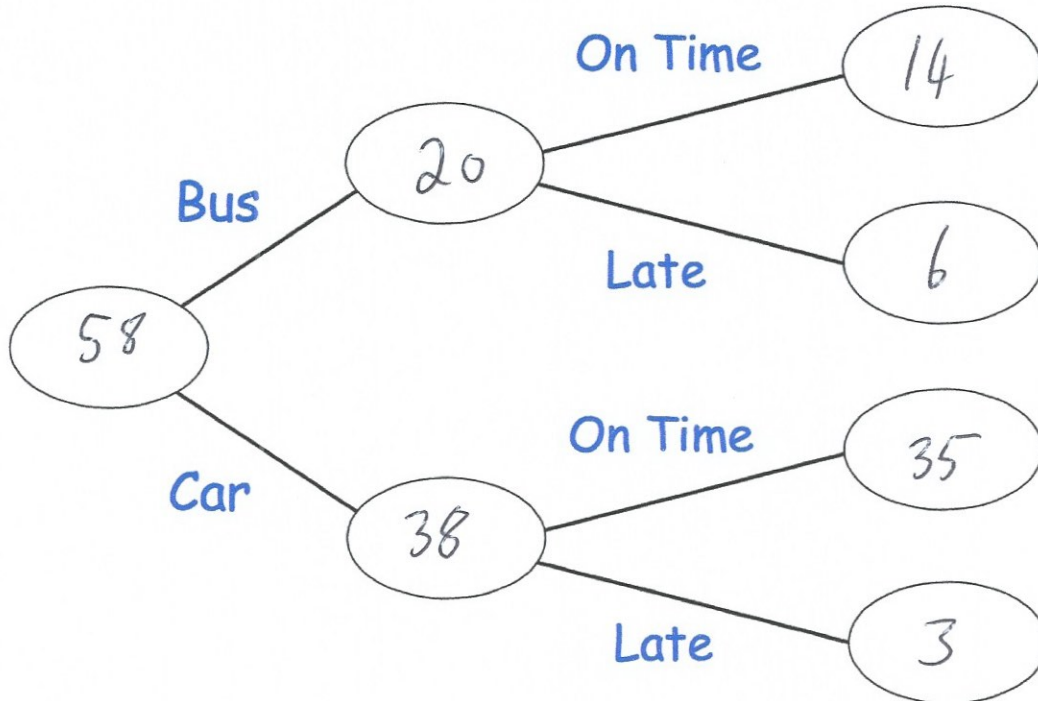
(2)

5. 58 people work for a company.  
They either travel to work by bus or car.



14 of the 20 people who travelled by bus were on time.  
3 people who travelled by car were late.

(a) Use this information to complete the frequency tree.



(3)

One person is picked at random.

(b) Work out the probability that this person travelled by car and was on time.

$$\frac{35}{58}$$

(2)

6. 160 people sit their driving test.

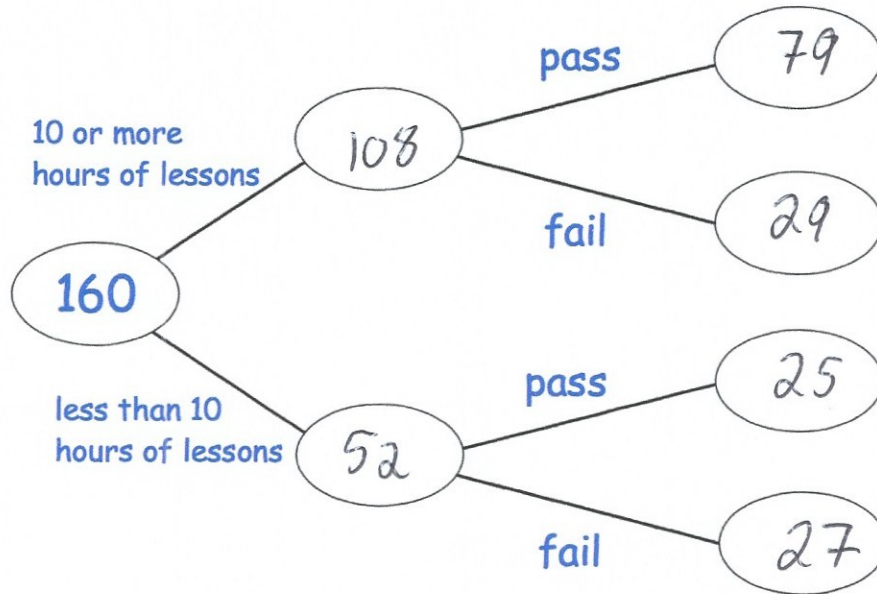


108 people took 10 or more hours of driving lessons.

29 of the people who took 10 or more hours of driving lessons failed their test.

104 people passed their driving test altogether.

(a) Use this information to complete the frequency tree.



(2)

One of the people who took less than 10 hours of lessons is picked at random.

(b) Work out the probability that this person passed their driving test.

$$\frac{25}{52}$$

(2)

7.

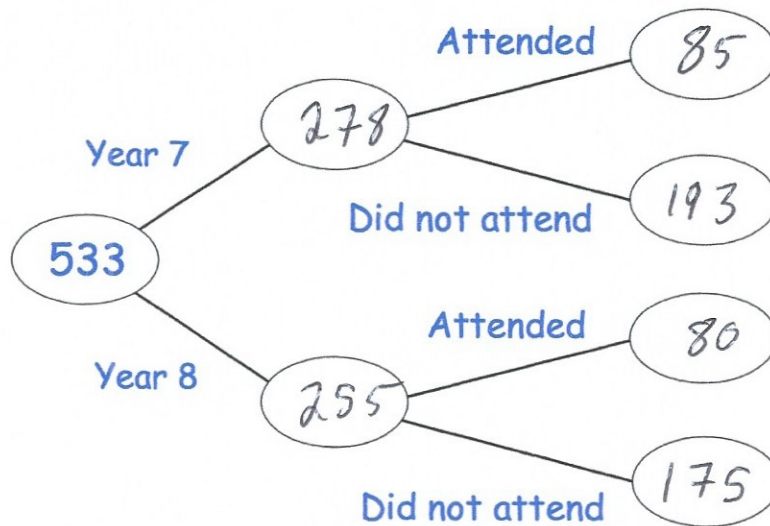


In a secondary school, there are 533 students altogether in Years 7 and 8. There are 255 students in Year 8.

The PE department run football training after school on a Thursday for Year 7 and 8 students.

85 of the 165 students that attended football training are in Year 7.

(a) Complete the frequency tree.



(2)

Mr Edwards says

“A greater percentage of the students in Year 7 attended football training than the students in Year 8.”

(b) Explain why Mr Edwards is wrong.

$$\text{year 7} \quad \frac{85}{278} = 30.6\%$$

$$\text{Year 8} \quad \frac{80}{255} = 31.4\%$$

A greater percentage of the students in year 8 attended football training.

(3)



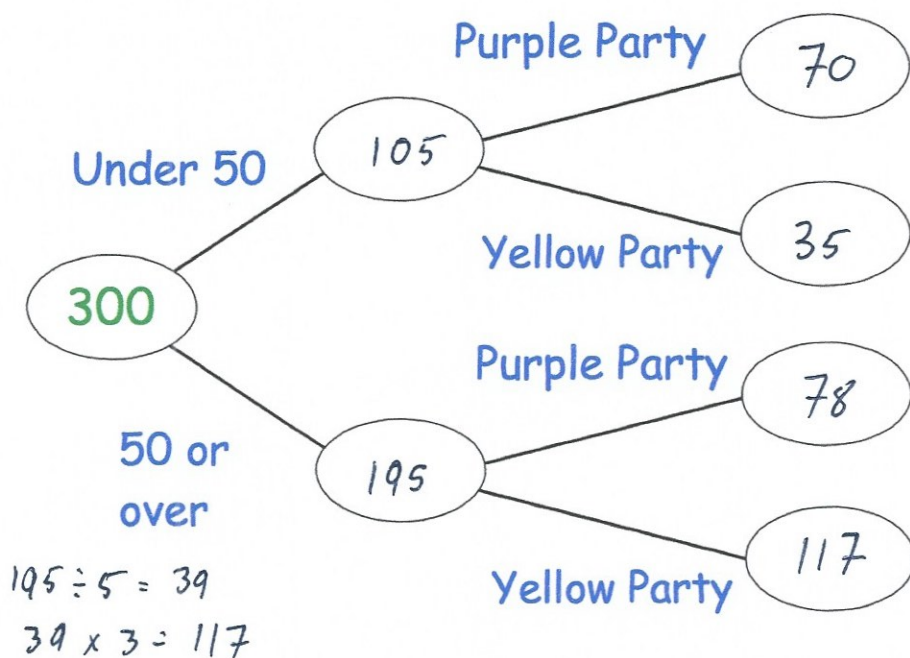
8. Corinne asked 300 people if they were more likely to vote for the Purple Party or the Yellow Party.

195 people were 50 years or over and the rest were under 50 years old.

$\frac{2}{3}$  of the people under 50 years old would vote for the Purple Party.

$\frac{3}{5}$  of the people who were 50 year or over would vote for the Yellow Party.

$$105 \div 3 = 35$$
$$35 \times 2 = 70$$



Which party did most people say that they were mostly likely to vote for?

Purple Party

$$70 + 78 = 148$$

Yellow Party

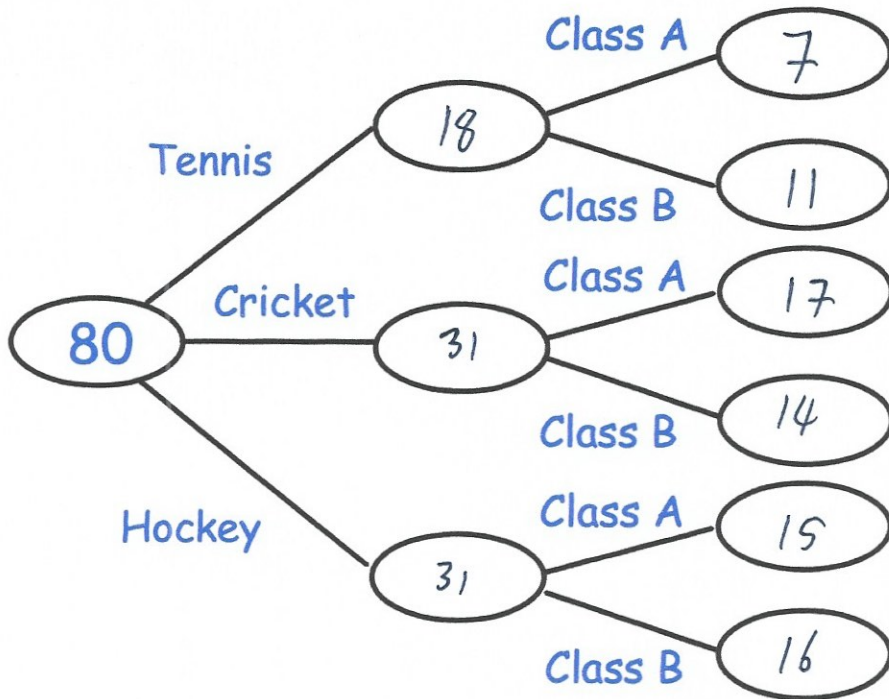
$$35 + 117 = 152$$

Yellow Party  
(4)

9. There are 80 students in Year 11.  
 The students are either in Class A or Class B.  
 All 80 students take part in one activity during their PE lesson.



39 of the 80 students are in Class A.  
 The same number of students play Cricket as Hockey.  
 11 of the 18 students playing tennis are Class B.  
 3 more Class A students than Class B students play cricket.



(a) Complete the frequency tree.

(4)

(b) What fraction of Class A play cricket?

$$\frac{17}{39}$$

(2)

10. On a Saturday evening, 390 people watched movies in a cinema.



The cinema sells two different types of ticket,

A standard movie ticket that costs £7.00

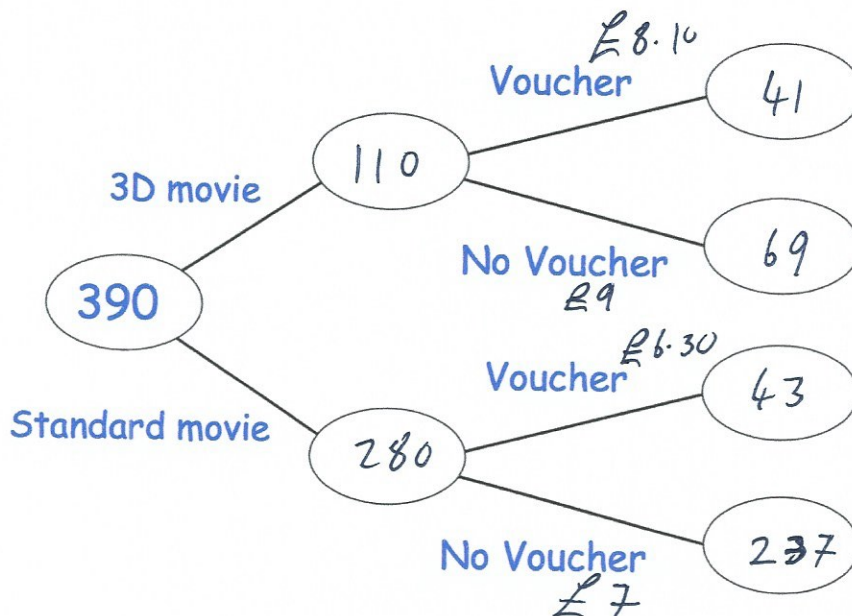
A 3-D movie ticket that costs £9.00

Some customers also have vouchers that entitle them to 10% off their ticket price.

110 customers bought tickets for 3D movies.

84 customers used a voucher.

237 of the customers who went to see a standard movie did **not** use a voucher.



Work out how much money the cinema made that evening through ticket sales.

$$41 \times £8.10 = £332.10$$

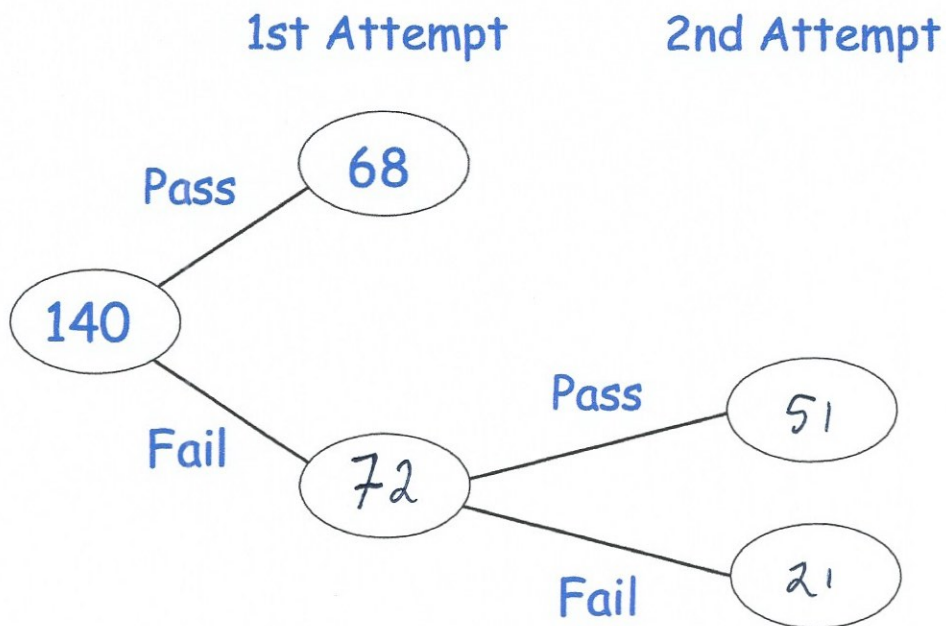
$$69 \times £9 = £621$$

$$43 \times £6.30 = £270.90$$

$$237 \times £7 = £1659$$

£.....2883  
(6)

11. 140 students sign up for a college course.  
At the end of the course, each student has two attempts to pass a test.  
If a student passes either attempt, they are awarded a certificate



85% of the students receive a certificate.

Work out how many students passed the test in their 2nd attempt.

$$85\% \text{ of } 140 = 119$$

$$119 - 68 = 51$$

51

(3)

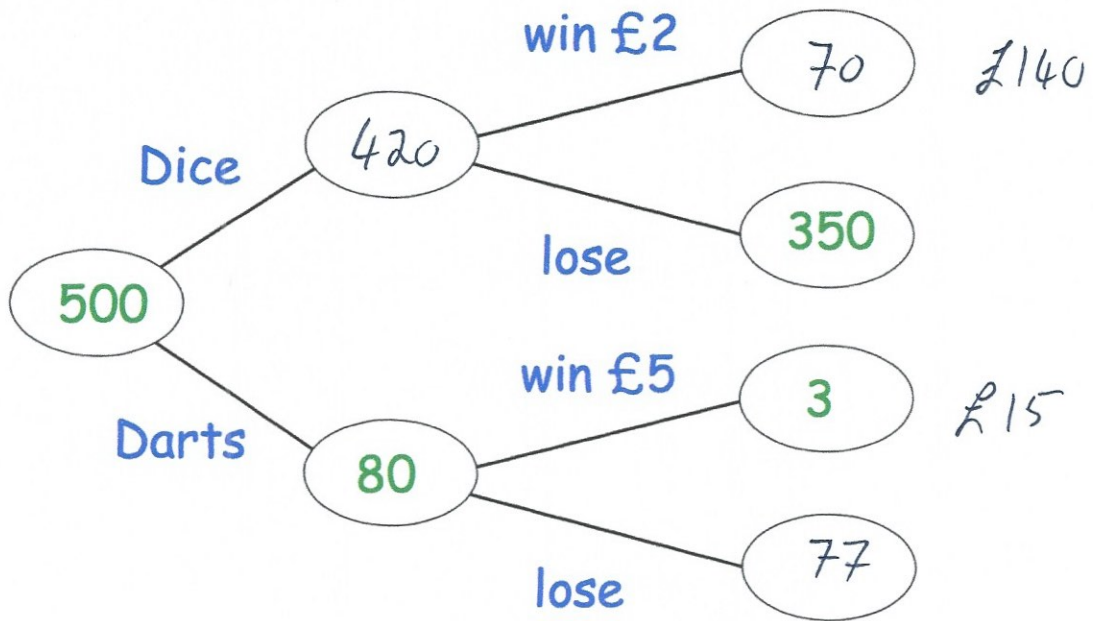
12. Barry runs a game at a school fayre.



Players can either try to roll a 6 on a dice or try to hit the bullseye with a dart. Each player pays some money and then chooses to either roll the dice or throw the dart.

If a player rolls a 6, they win £2.

If a player hits the bullseye, they win £5.



Altogether Barry makes £145 profit from the game.

How much does it cost to play Barry's game?

Winnings : £155

Profit :  $\frac{£145}{+}$   
 £300

$$£300 \div 500 = £0.60$$

£ 0.60  
 .....  
 (5)

13. In a college, all 240 Year 10 and Year 11 students study one language.



40 more students study French than Spanish.

Twice as many students study German than Spanish.

Twice as many Year 10 students study French than Year 11 students.

60% of the students studying Spanish are in Year 11.

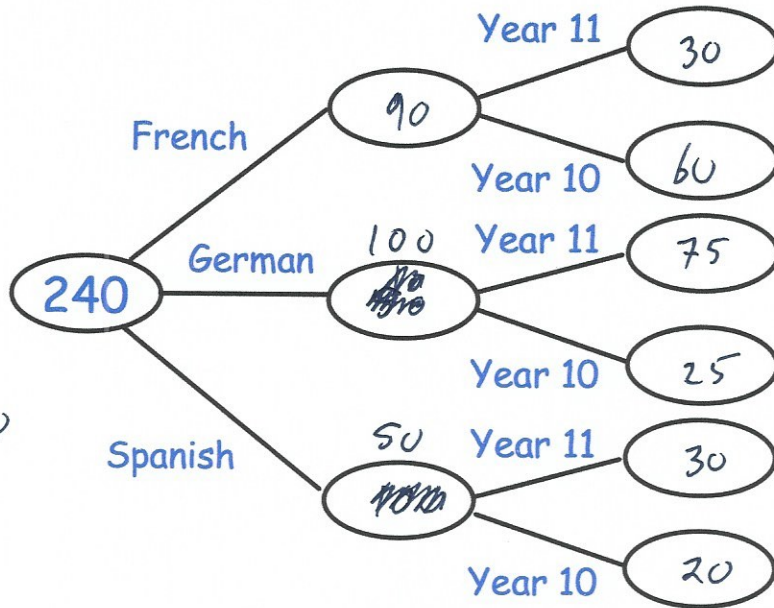
Three quarters of the students studying German are in Year 11.

French  $x+40$   
 Spanish  $x$   
 German  $2x$

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$4x+40$

$4x+40=240$   
 $4x=200$   
 $x=50$

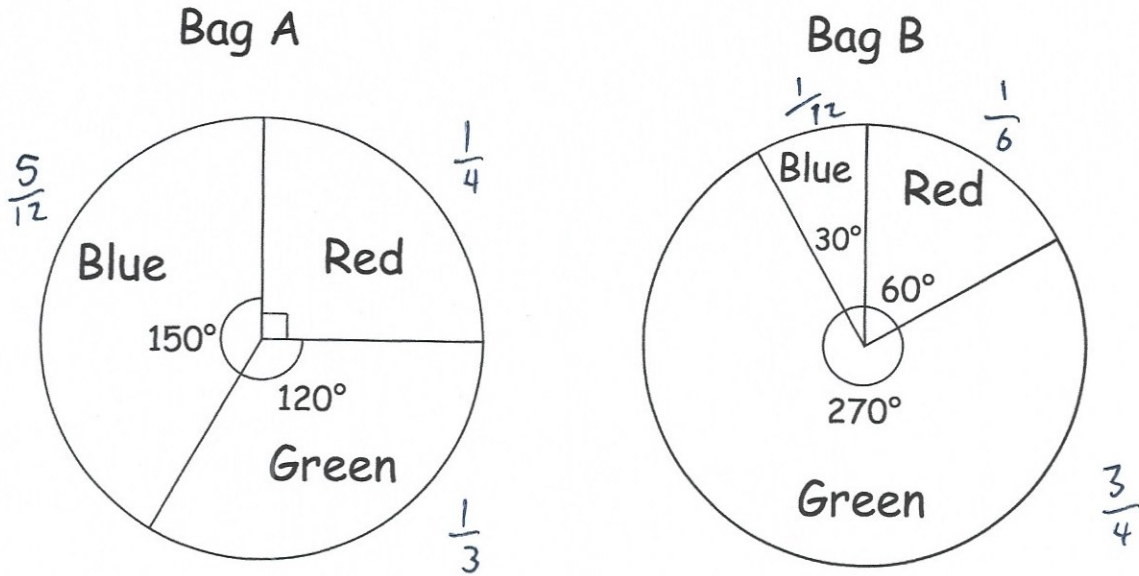


How many students are there in Year 10?

$60 + 25 + 20 = 105$

105  
 (6)

14. Bag A and Bag B contain Red, Green and Blue marbles. Altogether there are 552 marbles. The pie charts below show information about the marbles in each bag.



The number of marbles in Bag A : The number of marbles in Bag B = 3 : 20

Complete the frequency tree.

$$3 + 20 = 23$$

$$552 \div 23 = 24$$

$$24 \times 3 = 72$$

$$24 \times 20 = 480$$

