

Frequency Trees

1

60 students: 25 are girls. 15 of the girls walk to school. 20 of the boys walk to school.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that they walk to school.

(b) _____

60

girls25

boys35

walk15

do not walk10

walk20

do not walk

3

100 students sit a test: 45 are in Year 10, the rest in Year 11. 30 of Year 10 pass. 40 of Year 11 pass.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that they failed the test.

(b) _____

100

Year 1045

Year 11

pass30

fail

pass40

fail

5

120 people are asked if they like tea: 70 are men. 45 of the men like tea. 30 of the women do not like tea.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that they like tea.

(b) _____

men

women

like tea

do not

like tea

do not

7

200 students: 120 have a phone. 85 of the students with a phone also have a tablet. 30 of the others have a tablet.

(a) Draw a frequency tree. (b) A person is chosen at random. Find the probability that they have a tablet but no phone.

(b) _____

2

80 people at a cinema: 48 are adults. 30 of the adults buy popcorn. 22 of the children buy popcorn.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that they are a child who buys popcorn.

(b) _____

80

adults48

children32

popcorn30

no popcorn

popcorn22

no popcorn

4

50 dogs at a show: 18 are small. 12 of the small dogs have short hair. 20 of the large dogs have short hair.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that the dog has long hair.

(b) _____

50

small18

large

short hair12

long hair

short hair20

long hair

6

90 cars are tested: 36 are electric. 4 of the electric cars fail. 9 of the other cars fail.

(a) Complete the frequency tree. (b) A person is chosen at random. Find the probability that the car failed.

(b) _____

electric

other

pass

fail

pass

fail

8

150 runners: 64 are under 30. 48 of the under-30s finish the race. 70 of the others finish.

(a) Draw a frequency tree. (b) A person is chosen at random. Find the probability that they did not finish.

(b) _____

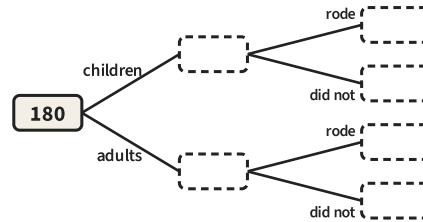
Frequency Trees *further practice*

9



180 people visited a farm park. 75 were children. 48 of the children rode on the tractor. 63 of the adults did not.

(a) Complete the frequency tree. (b) Find the probability that a visitor chosen at random rode on the tractor.



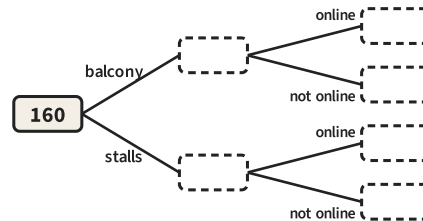
(b) _____

11



A theatre sold 160 tickets. $\frac{3}{8}$ of them were for the balcony and the rest for the stalls. 25 balcony tickets and 70 stalls tickets were bought online.

(a) Complete the frequency tree. (b) Find the probability that a ticket chosen at random was not bought online.



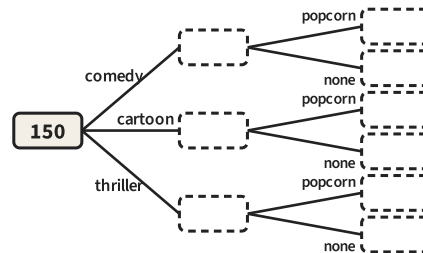
(b) _____

13



150 people saw a film: 40 saw a comedy, 65 a cartoon and the rest a thriller. 12 of the comedy, 39 of the cartoon and 18 of the thriller audience bought popcorn.

(a) Complete the frequency tree. (b) Find the probability that a person chosen at random did not buy popcorn.

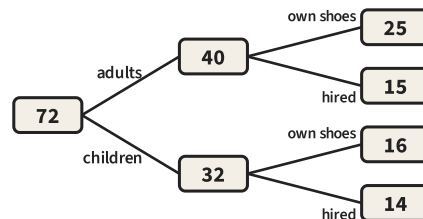


(b) _____

15



72 people visited a climbing wall. 40 were adults. 25 of the adults wore their own shoes. 14 of the children hired shoes. Noah drew this frequency tree. He has made one mistake. Find it and correct it.



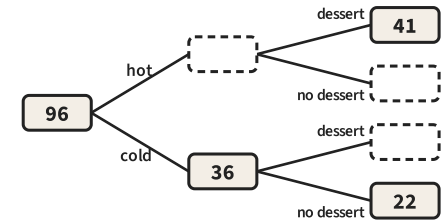
Answer _____

10



The frequency tree shows 96 meals ordered at a café, and whether each came with a dessert.

(a) Complete the frequency tree. (b) Find the probability that a meal chosen at random was a cold meal with a dessert.



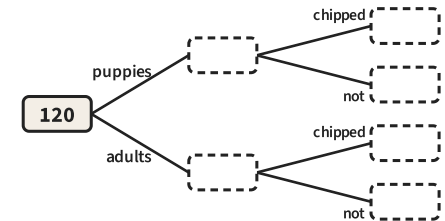
(b) _____

12



A rescue centre has 120 dogs. 45 are puppies, and 18 of these are microchipped. A dog is chosen at random. The probability that it is a microchipped adult is $\frac{1}{2}$.

(a) Complete the frequency tree. (b) Find the probability that it is not microchipped.

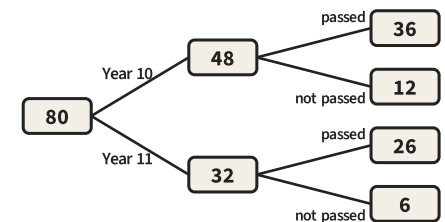


(b) _____

14



The frequency tree shows the results of 80 students in a first aid test. More Year 10 students than Year 11 students passed. Which year group did better in the test? Compare the fraction of each year group that passed.

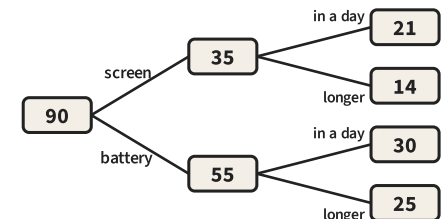


Answer _____

16



A shop repaired 90 phones. Jay says the probability that a phone chosen at random was a screen repair done in a day is $\frac{21}{35}$. Is Jay right? Explain.



Answer _____