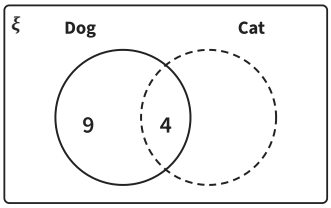
Conditional probability: Venn diagrams

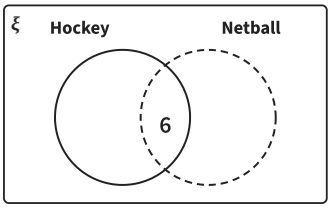
1

30 people: 13 have a dog, 10 have a cat and 4 have both.
Complete the Venn diagram.



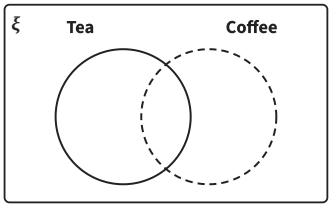
2

40 students: 22 play hockey, 15 play netball and 6 play both.
Complete the Venn diagram.



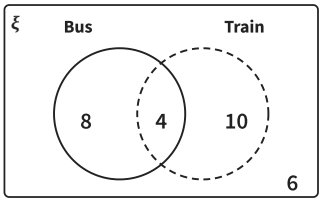
3

25 people: 12 drink tea, 9 drink coffee and 3 drink both. Complete the Venn diagram.



4

A person is chosen at random.
Given that the person takes the bus, find the probability that they also take the train.

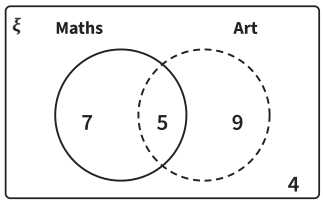


8 + 4 = 12

Answer _____

5

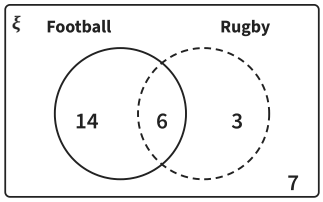
A student is chosen at random.
Given that the student likes art, find the probability that they also like maths.



Answer _____

6

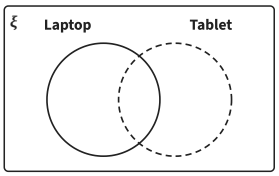
A student is chosen at random.
Given that the student plays football, find the probability that they also play rugby.



Answer _____

7 *Notice the change!*

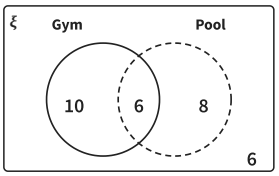
50 people: 27 have a laptop, 30 have a tablet and 15 have both. **Given that** a person has a laptop, find the probability that they also have a tablet.



Answer _____

8

A person is chosen at random.
Given that the person uses the pool, Leah says the probability that they also use the gym is $\frac{6}{30}$. Explain her mistake.

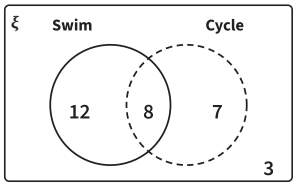


Answer _____

Conditional probability: Venn diagrams *further practice*

9

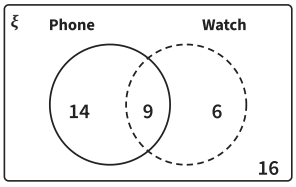
The Venn diagram shows 30 people.
Given that a person cycles, find the probability that they also swim.



Answer _____

10

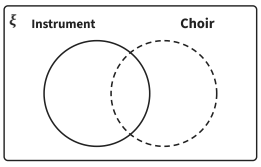
The Venn diagram shows 45 people.
Given that a person has a phone, find the probability that they also have a watch.



Answer _____

11

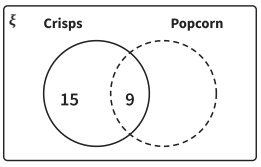
60 students: 34 play an instrument, 25 sing in a choir and 11 do both.
Given that a student sings in the choir, find the probability that they also play an instrument.



Answer _____

12

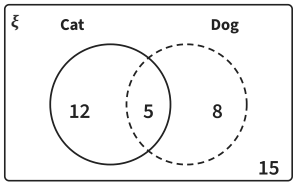
48 people: 15 like only crisps, 9 like crisps and popcorn, and 30 like popcorn. **Given that** a person likes crisps, find the probability that they also like popcorn.



Answer _____

13

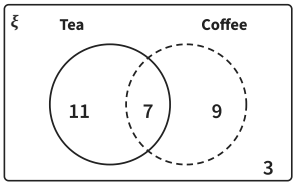
The Venn diagram shows 40 people.
Given that a person does **not** have a cat, find the probability that they have a dog.



Answer _____

14

The Venn diagram shows 30 people.
Given that a person drinks tea, find the probability that they do **not** drink coffee.



Answer _____

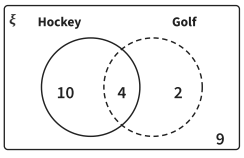
15

20 people have a bike and 14 have a scooter. **Given that** a person has a bike, the probability that they also have a scooter is $\frac{3}{10}$.
How many people have a scooter but not a bike?

Answer _____

16

Max says a hockey player is as likely to play golf as a golfer is to play hockey.
Is Max right? Show how you know.



Answer _____