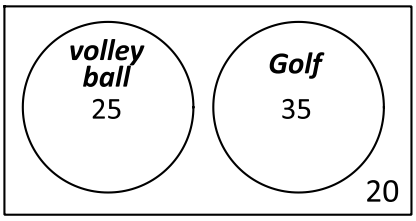
Year 8 Class 4 questions

Q1

This shows what the Year 9 students play for school sport.



How many students play volleyball?

☐ 25

How many students do not play golf?

☐ 45

How many students play neither volleyball nor golf? ☐ 20

Q2

Year 8 students were given a choice to study Art or Design.

	Art	Design	Total
Boys	24	41	65
Girls	15	43	58
Total	39	84	123

What percentage of the boys are taking Art?

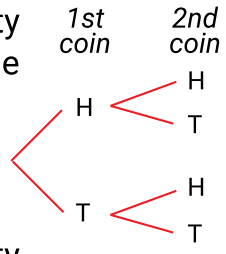
☐ % (1 d.p.) 36.9%

What percentage of the students who chose Design are girls?

☐ % (1 d.p.) 51.2%

Q3

The tree diagram shows the results when tossing two coins.



What is the probability of tossing a tail on the first coin?

☐/☐ $\frac{1}{2}$

What is the probability of tossing two heads?

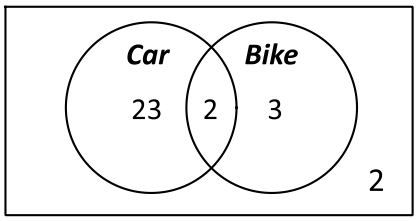
☐/☐ $\frac{1}{4}$

What is the probability of tossing a head and a tail in that order?

☐/☐ $\frac{1}{4}$

Q4

Residents in an apartment block were asked if they owned a car or a bike.



How many car owners also owned a bike? ☐ 2

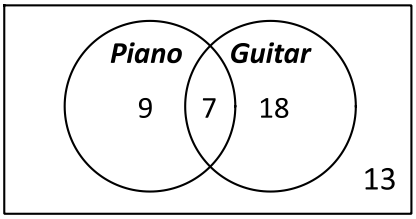
How many residents owned neither a car nor a bike? ☐ 2

What percentage of the residents owned both a car and a bike?

☐ % (1 d.p.) 6.7%

Q5

Ms Swifty's music students were asked what instruments they play.



How many play neither the piano nor the guitar? [ ] 13

What percentage play both piano and guitar? [ ] % (1 d.p.) 14.9%

Find the probability a student chosen at random plays the guitar.

[ ] % (1 d.p.) 53.2%

Q6

This table shows the hand most used by children at a day-care centre.

	Right-hand	Left-hand
Boys	34	8
Girls	32	6

Find the probability a child chosen at random is a left-handed boy.

[ ] % 10%

Find the probability a child chosen at random is a right-handed girl.

[ ] % 40%

Find the probability a child chosen at random is left-handed.

[ ] % 17.5%

Q7

This table shows the hand most used by children at a day-care centre.

	Right-hand	Left-hand
Boys	25	3
Girls	30	2

What percentage of the children who use their right hand the most are girls?

[ ] % (1 d.p.) 54.5%

What percentage of boys use their left hand the most?

[ ] % (1 d.p.) 10.7%

Q8

A hotel offers guests a choice of selecting one of either toast, cereal or fruit for breakfast. Each comes with a choice of either tea or coffee. One of these combinations is chosen at random.

Draw a tree diagram to help answer the question.

Find the probability that toast is chosen for breakfast.

$\frac{\square}{\square}$ $\frac{1}{3}$

Find the probability that a guest chooses cereal with coffee.

$\frac{\square}{\square}$ $\frac{1}{6}$

Find the probability that a guest chooses cereal or tea but not both.

$\frac{\square}{\square}$ $\frac{1}{2}$

Q9

Three cards labelled A, B and C are placed in a hat. Connor chooses one card, then replaces it before choosing a second card. *Draw a tree diagram to help answer the question.*

Find the probability that card C is chosen first.

$\frac{\square}{\square}$ $\frac{1}{3}$

Find the probability that cards A and B are chosen (in any order).

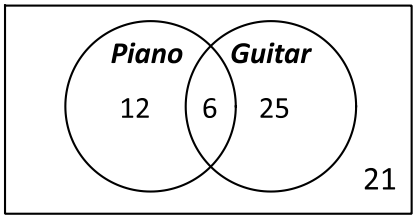
$\frac{\square}{\square}$ $\frac{2}{9}$

Find the probability that both cards are the same.

$\frac{\square}{\square}$ $\frac{1}{3}$

Q10

Mr Springsteen's music students were asked what instruments they play.



How many play both the piano and the guitar? ☐ 6

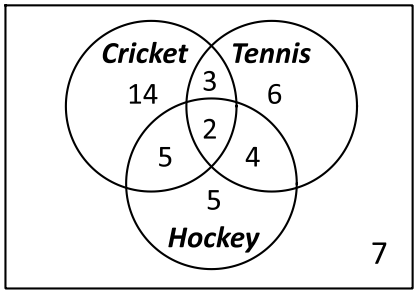
What percentage play neither the piano nor the guitar? ☐ % (1 d.p.) 32.8%

Find the probability a student chosen at random plays the piano.

☐ % (1 d.p.) 28.1%

Q11

Students in Mr Beacroft's classes were asked which summer sports they play.



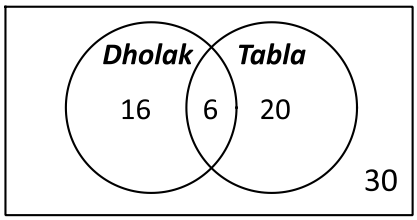
How many students play tennis only? ☐ 6

Of those who play hockey, how many also play tennis? ☐ 6

What percentage of those who play cricket play at least one other sport? ☐ % (1 d.p.) 41.7%

Q12

Mr Krishna's music students were asked what instruments they play.



How many of those who play tabla also play Dholak? ☐ 6

What percentage of those who play Dholak also play tabla? ☐ % (1 d.p.) 27.3%

Find the probability a student chosen at random plays both Dholak and tabla?

$\frac{\square}{\square}$ $\frac{1}{12}$

Q13

32 students are in a class. 18 own a cat, 8 own both a dog and a cat and there are 5 who own neither. Complete the table.

	Dog	No dog	Total
Cat	8	[ ] 10	[ ] 18
No Cat	[ ] 9	5	[ ] 14
Total	[ ] 17	[ ] 15	32

How many own a dog? [ ] 17

What percentage of cat owners also own a dog? [ ] % (1 d.p.) 44.4%

Q14

30 students are in a class. 19 own a dog, 7 own both a dog and a cat and there are 4 who own neither. Complete the table.

	Dog	No dog	Total
Cat	7	[ ] 7	[ ] 14
No Cat	[ ] 12	4	[ ] 16
Total	19	[ ] 11	30

How many own a cat? [ ] 14

What percentage of cat owners also own a dog? [ ] % 50%

Q15

30 students are in a class. 17 own a bike, 9 own both a bike and scooter and 6 own neither. Complete the table.

	Bike	No bike	Total
Scooter	9	[ ] 7	[ ] 16
No scooter	[ ] 8	6	[ ] 14
Total	[ ] 17	[ ] 13	30

How many own a scooter? [ ] 16

What percentage of bike owners also own a scooter? [ ] % (1 d.p.) 52.9%

Q16

James is playing a videogame. Each time he finishes a level he is awarded a randomly chosen bronze, silver or gold coin. James has completed two levels.

What is the probability he is awarded a bronze or silver coin on the first level?

$\frac{\square}{\square}$ $\frac{2}{3}$

What is the probability he is awarded a gold coin on both levels?

$\frac{\square}{\square}$ $\frac{1}{9}$

What is the probability he is awarded two coins of different colours?

$\frac{\square}{\square}$ $\frac{2}{3}$

Q17

At a wedding reception guests have a choice of a chicken, beef or vegetarian meal. Each comes with a choice of either dessert or a cheese platter.

Find the probability a guest chooses the beef meal with a dessert.

$\frac{\square}{\square}$ $\frac{1}{6}$

Find the probability a guest chooses the cheese platter.

$\frac{\square}{\square}$ $\frac{1}{2}$

Find the probability a guest chooses either chicken or dessert but not both.

$\frac{\square}{\square}$ $\frac{1}{2}$

Q18

A box contains an orange, an apple, a pear and a banana. Sue takes one piece of fruit at random and eats it. Ian then takes a piece of fruit at random from the box.

What is the probability that Sue chooses an apple?

$\frac{\square}{\square}$ $\frac{1}{4}$

What is the probability that Sue chooses an orange and Ian chooses a banana?

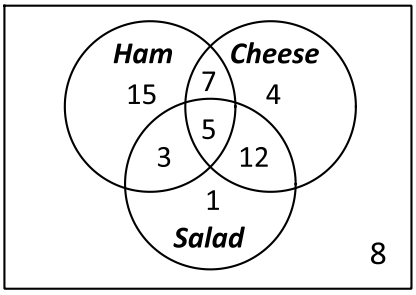
$\frac{\square}{\square}$ $\frac{1}{12}$

What is the probability that an apple and a pear are chosen?

$\frac{\square}{\square}$ $\frac{1}{6}$

Q19

This shows the sandwich fillings made for a catered function.



How many sandwiches have neither ham nor cheese? ☐ 9

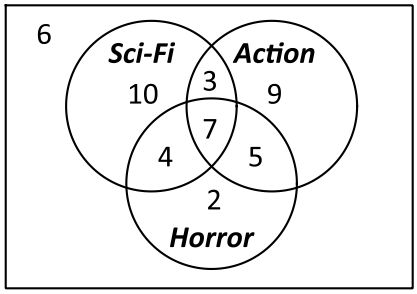
What percentage have ham and cheese but no salad? ☐ % (1 d.p.) 12.7%

Find the probability a sandwich picked at random has ham on it.

☐ % (1 d.p.) 54.5%

Q20

Students in Mr Kent's maths classes were asked what movie genres they like.



How many like both Horror and Action?

☐ 12

What percentage of students who like Horror also like Sci-Fi?

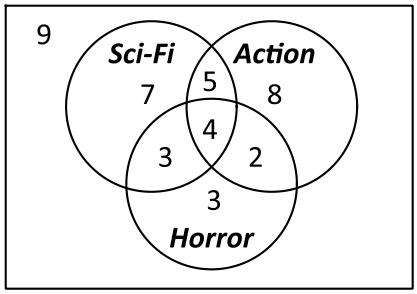
☐ % (1 d.p.) 61.1%

Find the probability a student chosen at random does not like Sci-Fi.

☐ % (1 d.p.) 47.8%

Q21

Students in Mr Allen's maths classes were asked what movie genres they like.



How many like both Sci-Fi and Action?

☐ 9

What percentage like all three genres?

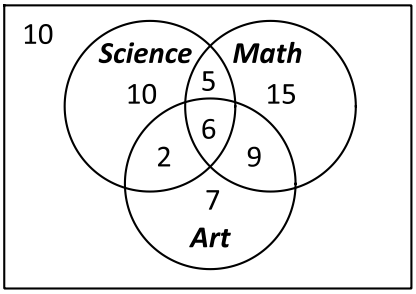
☐ % (1 d.p.) 9.8%

Find the probability a student chosen at random does not like Horror.

☐ % (1 d.p.) 70.7%

Q22

Students in class were asked which subject they like.



How many like both Science and Mathematics? [ ] 11

What percentage like all three subjects?

[ ] % (1 d.p.) 9.4%

How many like both Art and Science but not Mathematics?

[ ] 2

Q23

A travel company offers 15 tours. 9 of the tours include mountain climbing, 7 include diving and 5 tours include both mountain climbing and diving. Complete the table.

	Mountain Climbing	No Mountain Climbing	Total
Diving	[ ] 5	[ ] 2	[ ] 7
No Diving	[ ] 4	[ ] 4	[ ] 8
Total	[ ] 9	[ ] 6	[ ] 15

How many tours include mountain climbing but not diving? [ ] 4

What percentage of the diving tours also include mountain climbing?

[ ] % (1 d.p.) 71.4%

Q24

A travel company offers 20 tours. 8 tours include climbing, 12 tours include diving and 5 include both climbing and diving. Complete the table.

	Climbing	No Climbing	Total
Diving	[ ] 5	[ ] 7	[ ] 12
No Diving	[ ] 3	[ ] 5	[ ] 8
Total	[ ] 8	[ ] 12	[ ] 20

How many tours include climbing but not diving? [ ] 3

What percentage of the climbing tours also include diving? [ ] % 62.5%

Q25

A travel company offers 25 tours. 9 tours include climbing, 16 tours include diving and 6 include both climbing and diving. Complete the table.

	Climbing	No Climbing	Total
Diving	[ ] 6	[ ] 10	[ ] 16
No Diving	[ ] 3	[ ] 6	[ ] 9
Total	[ ] 9	[ ] 16	[ ] 25

How many tours include diving but not climbing? [ ] 10

What percentage of the diving tours also include climbing? [ ] % 37.5%

Q26

A travel company offers 75 tours. 27 tours include diving, 48 tours include climbing and 18 include both climbing and diving. Complete the table.

	Climbing	No Climbing	Total
Diving	[ ] 18	[ ] 9	[ ] 27
No Diving	[ ] 30	[ ] 18	[ ] 48
Total	[ ] 48	[ ] 27	[ ] 75

How many tours include diving but not climbing? [ ] 9

What percentage of the climbing tours do not include diving? [ ] % 62.5%

Q27

Three cards labelled 1, 2 and 3 are placed in a hat. Two cards are chosen one at a time and placed next to each other to form a two digit number.

What is the probability that the number is even?

$\frac{\square}{\square}$ $\frac{1}{3}$

What is the probability that the number is prime?

$\frac{\square}{\square}$ $\frac{1}{2}$

If this process is done 150 times, how many odd numbers would you expect to get?

$\square$ 100

Q28

A box contains two pink cricket balls and one red cricket ball. Isaac is given one ball from the box which he keeps and then Ryder is given a second ball.

What is the probability that they are both given a pink ball?

$\frac{\square}{\square}$ $\frac{1}{3}$

What is the probability that Isaac is given a red ball and Ryder is given a pink ball?

$\frac{\square}{\square}$ $\frac{1}{3}$

If this process is repeated 30 times, how many times would you expect them both to be given different coloured balls?

$\square$ 20

Q29

Three cards labelled 4, 5 and 6 are placed in a box. Two cards are chosen one at a time and placed next to each other to form a two digit number.

What is the probability that the number is even?

$\frac{\square}{\square}$ $\frac{2}{3}$

What is the probability that the number is greater than 50?

$\frac{\square}{\square}$ $\frac{2}{3}$

If this process is done 150 times, how many odd numbers would you expect to get?

$\square$ 50

Q30

A bag contains a red, yellow and white football. A ball is picked out of the bag and then replaced before a second ball is chosen.

What is the probability that the red football is chosen twice?

$\frac{\square}{\square}$ $\frac{1}{9}$

What is the probability that the yellow ball was chosen?

$\frac{\square}{\square}$ $\frac{5}{9}$

What is the probability that the white ball is chosen second?

$\frac{\square}{\square}$ $\frac{1}{3}$