Year 9 Class 23 questions

Q1

Musical instruments played.

	guitar (G)	not guitar ($\tilde{G}$)	
saxophone (S)	0.41	0.18	0.59
not saxophone ($\tilde{S}$)	0.15	0.26	0.41
	0.56	0.44	1

What percentage play the saxophone but not the guitar?

[ ] %

What percentage play either the saxophone or guitar?

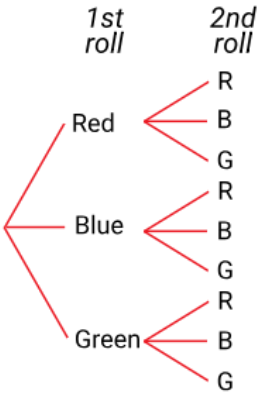
[ ] %

Find the probability a student chosen at random plays both.

[ ] %

Q2

The tree diagram shows the results when spinning a spinner with three equal coloured sectors.



What is the probability of spinning blue on the 1st spin?

[ ]/[ ]

What is the probability of spinning red at least once?

[ ]/[ ]

What is the probability of spinning green both times?

[ ]/[ ]

Q3

A two digit number is formed using the digits 1 to 4. The list shows all the possible results.

11	21	31	41
12	22	32	42
13	23	33	43
14	24	34	44

Find the probability the number is odd.

[ ]/[ ]

Find the probability the number contains exactly one 3.

[ ]/[ ]

Find the probability the sum of the two digits is greater than 4.

[ ]/[ ]

Q4

Favourite sports to watch on television.

	football	cricket	
male	0.56	0.16	0.72
female	[ ]	0.19	[ ]
	0.65	[ ]	1

Complete the table.

What percentage were female?

[ ] %

Find the probability a person chosen at random is a female who watches football.

[ ] %

If 240 people were surveyed, how many liked watching football?

[ ]

Q5

Percentage of people exercising at a park.

	jogging (J)	not jogging ($\tilde{J}$)	
walking (W)	0.52		0.63
not walking ($\tilde{W}$)		0.3	
	0.59	0.41	1

Complete the table.

What percentage of people are jogging?

____ %

Find the probability a person chosen at random walks but does not jog.

____ %

If there are 160 people at the park, how many are not exercising?

____

Q6

Kirsten is playing a videogame. Each time she finishes a level she is awarded a coin which is either green or red. The colour of the coin is randomly selected. Kirsten has completed two levels.
Draw a tree diagram to help answer the question.

Find the probability that her first coin is green.

____

What is the probability that both her coins are the same colour?

____

What is the probability she is awarded a green coin followed by a red coin?

____

Q7

A box contains one original, one salt and vinegar and one chicken flavoured packet of chips. Jack chooses two packets of chips at random.
Draw a tree diagram to help answer the question.

Find the probability that his first choice is chicken.

____

Find the probability that he chooses original and then chicken.

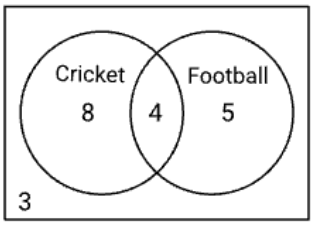
____

Find the probability that salt and vinegar is chosen in either choice.

____

Q8

Students in Mr Hazlewood's class chose their favourite sport.



Find the probability a student chosen at random plays cricket.

____

Find the probability a student chosen at random plays football but not cricket.

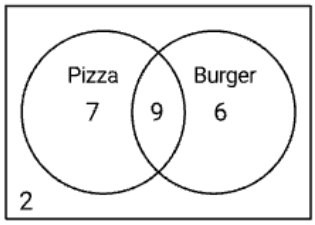
____

Find the probability a student chosen at random plays both football and cricket.

____

Q9

Students in Mr Daniel's class chose their favourite food.



Find the probability a student chosen at random likes pizza.

$\frac{\square}{\square}$

Find the probability a student chosen at random likes both pizza and burgers.

$\frac{\square}{\square}$

Find the probability a student chosen at random likes neither pizza nor burgers.

$\frac{\square}{\square}$

Q10

In a group of 200 students: 18% study art and history, 12% study art but not history and 42% study neither. Draw up a two-way table to represent this information.

What percentage study history but not art?

$\square$ %

What percentage study art?

$\square$ %

How many do not study history?

$\square$

Q11

In a group of 120 students: 25% play cricket but not soccer, 13% play cricket and soccer and 32% play neither. Draw up a two-way table to represent this information.

What percentage play soccer but not cricket?

$\square$ %

What percentage play cricket?

$\square$ %

How many play soccer but not cricket?

$\square$

Q12

On a bus with 60 passengers: 55% of the passengers are male, 35% of passengers have blue eyes and 35% of passengers are not male and do not have blue eyes. Draw up a two-way table to represent this information.

What percentage are male but do not have blue eyes?

$\square$ %

Find the probability a person chosen at random is a blue-eyed female.

$\square$ %

How many do not have blue eyes?

$\square$

Q13

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?

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

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

Q14

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.

Find the probability a guest chooses the cheese platter.

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

Q15

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?

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

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

Q16

Two standard dice are tossed and their product, P, is calculated.

Find the probability that P is 6.

Find the probability that P is even.

Find the probability that scores of 2 and 2 are recorded in two tosses of the pair of dice.

Q17

Two standard dice are tossed and their sum, S, is calculated.

Find the probability that S is 4.

$\frac{\square}{\square}$

Find the probability that S is even.

$\frac{\square}{\square}$

Find the probability that scores of 10 and 10 are recorded in two tosses of the pair of dice.

$\frac{\square}{\square}$

Q18

Two standard dice are tossed and their product, P, is calculated.

Find the probability that P is 8.

$\frac{\square}{\square}$

Find the probability that P is odd.

$\frac{\square}{\square}$

Find the probability that scores of 4 and 4 are recorded in two tosses of the pair of dice.

$\frac{\square}{\square}$

Q19

Of 700 people tested, 20% test positive to virus E, 15% test positive to virus P and 70% test negative to both.

Find the probability that a person chosen at random has E but not P.

$\square$ %

Find the number of people with both.

$\square$

If this is a representative sample, find the number of people in a town of 20,000, who have at least one of the viruses.

$\square$

Q20

In a class with 40 students, 55% have a pet dog, 15% have a pet dog and a pet cat and 20% have neither.

Find the probability a student chosen at random has a dog but not a cat.

$\square$ %

Find the number of students with a pet cat.

$\square$

If this is a representative sample, find the number of students in a school with 600 students, who have at least one of these pets.

$\square$

Q21

In a group of 120 people attending a concert: 21% were males with 'floor-standing' tickets, 42% were females with 'seated' tickets and 61% had 'seated' tickets.

Find the probability a person chosen at random has a 'floor - standing' ticket.

[ ] %

Find the number of females in the group.

[ ]

If this is a representative sample of the 18,500 people at the concert, find the number of people who are seated.

[ ]

Q22

Of 500 people tested, 30% test positive to Influenza A, 15% test positive to Influenza B but not to Influenza A and 8% test positive to both.

Find the probability that a person chosen at random has Influenza A but not B.

[ ] %

Find the number of people with neither.

[ ]

If this is a representative sample, find the number of people in a town of 15,000, who have at least one of the viruses.

[ ]

Q23

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?

[ ]/[ ]

What is the probability that the number is prime?

[ ]/[ ]

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

[ ]

Q24

A box contains 2 raspberry, 2 lemon and 2 cola ice-blocks. Jeremy takes two ice-blocks at random from the box.

What is the probability that he gets two ice-blocks the same flavour?

[ ]/[ ]

What is the probability that he gets two lemon ice-blocks?

[ ]/[ ]

If this process was repeated 20 times, how many times would you expect him to get two different flavoured ice-blocks?

[ ]

Q25

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?

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

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

Q26

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?

What is the probability that the yellow ball was chosen?

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

Q27

In a class of 32 students; 18 study History, 24 study Geography and 2 study neither.

What is the probability a student chosen at random studies both History and Geography?

What is the probability a student chosen at random studies Geography but not History?

What is the probability two students chosen at random both study History?

Q28

In a class of 28 students; 15 study Music, 21 study Visual Arts and 3 study neither.

What is the probability a student chosen at random studies both Music and Visual Arts?

What is the probability a student chosen at random studies Visual Arts but not Music?

What is the probability two students chosen at random both study Music?

Q29

In a class of 27 students; 16 study French, 12 study Mandarin and 6 study neither.

What is the probability a student chosen at random studies both French and Mandarin?

$\frac{\square}{\square}$

What is the probability a student chosen at random studies Mandarin but not French?

$\frac{\square}{\square}$

What is the probability two students chosen at random both study French?

$\frac{\square}{\square}$

Q30

In a class of 26 students; 15 study Biology, 14 study Chemistry and 4 study neither.

What is the probability a student chosen at random studies both Biology and Chemistry?

$\frac{\square}{\square}$

What is the probability a student chosen at random studies Chemistry but not Biology?

$\frac{\square}{\square}$

What is the probability two students chosen at random both study Biology?

$\frac{\square}{\square}$