

## Year 9 Class 22 questions

### Q1

A normal six sided dice is rolled. Find the probability that it lands on 5 or 6.

$\frac{1}{3}$

### Q2

Stella surveyed 30 students at her school about their favourite TV show. Out of the students surveyed, 12 chose Friday Flix. Find the experimental probability the next student Stella talks to chooses Friday Flix.

%  $40\%$

### Q3

Each time Phil plays his favourite computer game he earns one token. The table shows the tokens he has earned so far.

Colour	Tokens
red	31
blue	23
green	38

How many games has Phil played?

$92$

What is the relative frequency of blue?

$0.25$

Phil plays another 20 games. How many more blue tokens could he expect?

$5$

### Q4

A card is picked at random from a standard deck of 52 cards. Find the probability that it is black.

$\frac{1}{2}$

### Q5

A card is picked at random from a standard deck of 52 cards. Find the probability that it is a club.

$\frac{1}{4}$

### Q6

A survey of 100 factory workers found that 20 were left-handed. If this sample is representative of the 5100 workers in a factory, how many left-handed factory workers would you expect?

$1020$

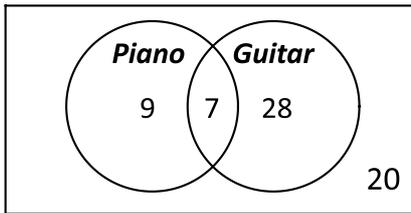
### Q7

A survey of 100 children in a village found that 95 of them had blue eyes. If this is representative of the 3600 people in the whole village, how many blue eyed people could you expect there to be in the village?

$3420$

**Q8**

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



How many students were surveyed?

64

Find the relative frequency of the piano players.

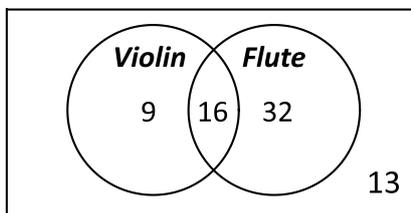
0.25

Using these results, find the probability a student chosen at random plays the guitar.

% (1 d.p.) 54.7%

**Q9**

Mr Jones' music students were asked what instruments they play.



How many students were surveyed?

70

Find the relative frequency of flute.

(2 d.p.) 0.69

Using these results, find the probability a student chosen at random plays neither instrument.

% (1 d.p.) 18.6%

**Q10**

A pack of 52 playing cards has 4 suits: Clubs, Spades, Diamonds and Hearts. Julie draws one card from this pack. Find the probability that the card is:

a Heart.   $\frac{1}{4}$

a red (Hearts or Diamonds).   $\frac{1}{2}$

a black (Spades or Clubs).   $\frac{1}{2}$

a black 6.   $\frac{1}{26}$

an Ace.   $\frac{1}{13}$

**Q11**

A bag contains 3 blue, 5 black, 6 red and 6 chrome hairclips. Gillian is going to do her hair. Find the probability that she chooses:

a blue hairclip.   $\frac{3}{20}$

a black hairclip.   $\frac{1}{4}$

a chrome hairclip.   $\frac{3}{10}$

a hairclip that is either red or chrome.   $\frac{3}{5}$

a hairclip that is not red.   $\frac{7}{10}$

**Q12**

At Andy's pizzas, 4 of the last 10 pizzas sold were pepperoni. If altogether there are 360 pizzas sold in a day, how many pepperoni pizzas could he expect to sell?

144

### Q13

At Ollie's bakery, 6 of the last 14 pies sold were curry pies. If Ollie sells 70 pies in a day, how many curry pies could he expect to sell?

30

### Q14

At Ella's bike shop, 4 of the last 6 bikes sold were mountain bikes. If Ella sells 15 bikes in a week, how many could she expect to be mountain bikes?

10

### Q15

There are approximately 172 000 university students in NZ. A random sample of 500 students found that 210 of them lived with their parents. Based on this, how many NZ university students live with their parents?

72 240

### Q16

Townsville's population is about 192 000. A random sample of 600 residents found that 97 of them attended a recent music festival. Based on this sample, how many Townsville residents would you expect to have attended the music festival?

31 040

### Q17

A box has 24 marbles that are either green or yellow. Lisa takes one marble out, notes the colour, then puts it back in the box. She does this 40 times.

Colour	Freq.
green	10
yellow	30

What is the relative frequency of green?

0.25

Using these results, what is the probability a marble drawn at random will be yellow?

% 75%

How many green marbles would you expect there to be in the box?

6

### Q18

A box has 15 marbles that are either green or yellow. Nina takes one marble out, notes the colour, then puts it back in the box. She does this 50 times.

Colour	Freq.
green	40
yellow	10

What is the relative frequency of green?

0.8

Using these results, what is the probability a marble drawn at random will be yellow?

% 20%

How many green marbles would you expect there to be in the box?

12

### Q19

A box has 35 marbles that are either green or yellow. Rona takes one marble out, notes the colour, then puts it back in the box. She does this 40 times.

Colour	Freq.
green	16
yellow	24

What is the relative frequency of green?

0.4

Using these results, what is the probability a marble drawn at random will be yellow?

% 60%

How many green marbles would you expect there to be in the box?  14

### Q20

A box has 30 marbles that are either blue or red. Issac takes one marble out, notes the colour, then puts it back in the box. He does this 50 times.

Colour	Freq.
blue	20
red	30

What is the relative frequency of blue?

0.4

Using these results, what is the probability a marble drawn at random will be red?

% 60%

How many blue marbles would you expect there to be in the box?  12

### Q21

A company's research shows it makes sales to 58% of all people who make a phone enquiry.

What percentage of phone enquiries do not result in a sale?

% 42%

2800 phone enquiries were made in May. How many sales could be expected?

1624

### Q22

A company's research shows it makes sales to 43% of all people who make an email enquiry about their products.

What percentage of email enquiries do not result in a sale?

% 57%

2300 people made email enquiries last month. From these, how many sales could be expected?

989

### Q23

Arthur has a 24% chance of hitting the bullseye when throwing a dart.

Find the chance of missing the bullseye.

% 76%

During a game, he had 250 throws. How many times would you expect him to hit the bullseye?

60

### Q24

A company's research shows it makes sales to 24% of all people who make a phone enquiry.

What percentage of phone enquiries do not result in a sale?

% 76%

Out of 3600 phone enquiries made, how many sales could be expected?

864

### Q25

A company's research shows it makes sales to 28% of all people who make an email enquiry about their products.

What percentage of email enquiries do not result in a sale?

% 72%

1200 people made email enquiries last month. From these, how many sales could be expected?

336

### Q26

Mrs Philips keeps 6 pens (blue, black or red) in her desk drawer. Each day she takes one out at random to mark the roll.

Colour	Freq.
blue	102
black	64
red	30

What is the relative frequency of black?

(2d.p.) 0.33

How many red pens do you think are in her drawer?  1

Term 1 had 48 days. How many times would you expect she chose a black pen?

12  16  18  21

### Q27

Mr Noney keeps 6 pens (blue, black or red) in his desk drawer. Each day he takes one out at random to mark the roll.

Colour	Freq.
blue	99
black	63
red	32

What is the relative frequency of blue?

(2d.p.) 0.51

How many black pens do you think are in his drawer?  2

Term 2 had 50 days. How many times would you expect he chose a red pen?

8  10  12  14

### Q28

Mrs Arnold keeps 9 pens (blue, green or red) in her desk drawer. Each day she takes one out at random to mark the roll.

Colour	Freq.
blue	79
green	64
red	41

What is the relative frequency of red?

(2d.p.) 0.22

How many green pens do you think are in her drawer?  3

Term 3 had 45 days. How many times would you expect she chose a blue pen?

15  16  18  19

### Q29

Mrs Taylor keeps 9 pens (blue, green or red) in her desk drawer. Each day she takes one out at random to mark the roll.

Colour	Freq.
blue	65
green	98
red	21

What is the relative frequency of blue?

(2d.p.) 0.35

How many green pens do you think are in her drawer?  5

Term 4 had 45 days. How many times would you expect she chose a red pen?

5  8  9  11

**Q30**

Mr Murray keeps 7 pens (blue, black or red) in his desk drawer. Each day he takes one out at random to mark the roll.

Colour	Freq.
blue	96
black	54
red	63

What is the relative frequency of black?

(2 d.p.) 0.25

How many red pens do you think are in his drawer?  2

Term 3 had 47 days. How many times would you expect he chose a blue pen?

- 19  21  23  18