

Question 1 - (1 marks available)

Write $\frac{7}{50}$ as a percentage.

Total marks: 1

Question 2 - (1 marks available)

Write 2.37 correct to 1 decimal place.

Total marks: 1

Question 3 - (1 marks available)

Work out the value of 4^5

Total marks: 1

Question 4 - (1 marks available)

What is the value of the 6 in the number 346 094?

Total marks: 1

Question 5 - (3 marks available)

- a) Change 65 cm to mm. (1)
- b) Change 5400 millilitres to litres. (1)
- c) Change 0.18 kilograms to grams. (1)

Total marks: 3

Question 6 - (3 marks available)

Olivia is thinking of a number.
She says, "My number is odd. It is a factor of 30 and a multiple of 3"

There are two possible numbers Olivia can be thinking of.

Write down the two numbers.

*Note: Please make your final answers clear
by writing **The 2 numbers are ... and ...***

Total marks: 3

Question 7 - (2 marks available)

Alex, Toby and Samuel are playing a game together.
At the end of the game, they will make a classification with one of them in First place, one of them in Second place and one of them in Third place.

Work out how many possible outcomes there could be at the end of their game.

*Note: Please make your final answer clear by writing ... **outcomes***

Total marks: 2

Question 8 - (5 marks available)

Mandy buys 36 pens, 36 pencils, 36 rulers and 36 pencil cases.

Price list	
pens	4 for 75p
pencils	12 for 42p
rulers	6 for £1.10
pencil cases	54p each

What is the total amount of money spent by Mandy?

Total marks: 5

Question 9 - (4 marks available)

Helen drives 195 miles in 3 hours.

a) What is her average speed in mph?

(2)

Matthew drives at an average speed of 62 mph for 5 hours.

b) How many miles does Matthew drive?

(2)

Total marks: 4

Question 10 - (3 marks available)

Write down all the prime numbers between 20 and 40

Total marks: 3

Question 11 - (3 marks available)

a) Solve $x + x + x = 54$

(1)

b) Solve $\frac{y}{5} = 7$

(1)

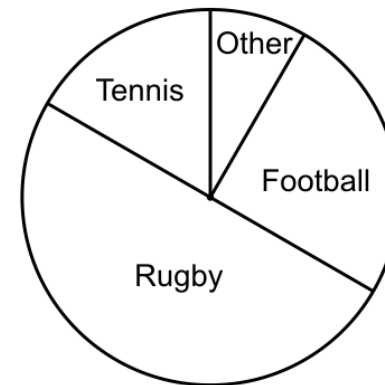
c) Solve $4t + 6 = 24$

(1)

Total marks: 3

Question 12 - (3 marks available)

The pie chart shows the favourite sports of a group of students.



For each statement below, decide if it is *True (A)*, *False (B)* or *Impossible to say (C)*.

a) None of the students chose Netball.

(1)

b) More students opted for Football than Tennis.

(1)

c) Half of the students did not choose Rugby.

(1)

Total marks: 3

Question 13 - (2 marks available)

A community centre organises a raffle to raise money for charity.
There is 1 prize to be won in the raffle.

Daniel buys 17 raffle tickets.
A total of 280 tickets were sold.

Find the probability that Daniel does **not** win the prize.

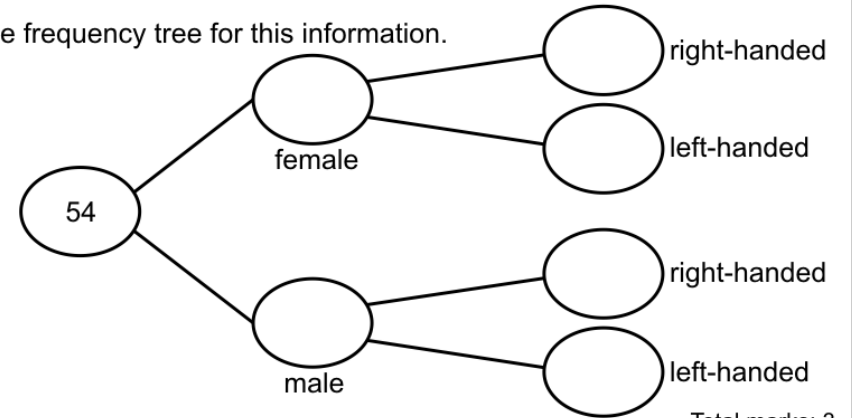
Total marks: 2

Question 14 - (3 marks available)

Each employee in a company is either right-handed or left-handed.

32 of the 54 employees are female.
18 of the 41 right-handed employees are male.

Complete the frequency tree for this information.

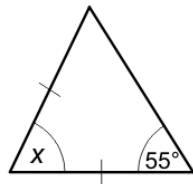


Total marks: 3

Question 15 - (2 marks available)

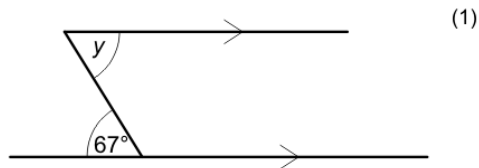
a) Work out angle x .

$x =$ ° (1)



b) Write down the value of angle y , giving a reason for your answer.

$y =$



Total marks: 2

Question 16 - (3 marks available)

Abid buys some bags of buttons.

There are 23 buttons or 24 buttons or 25 buttons or 26 buttons in each bag.

The table gives some information about the number of buttons in each bag.

Number of buttons	Frequency
23	x
24	8
25	1
26	6

The total number of buttons is 580

Find the value of x .

Total marks: 3

Question 17 - (3 marks available)

Here is a list of ingredients to make biscuits.

200 g butter
180 g caster sugar
400 g plain flour
20 g chocolate chips

Andrew only has 300 g of plain flour.
How much of the other ingredients should he use?

g butter

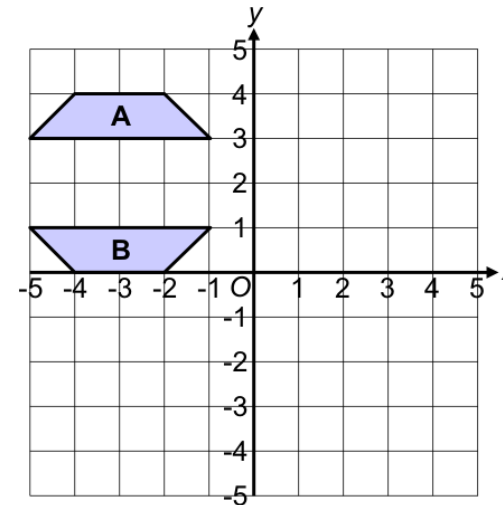
g caster sugar

g chocolate chips

Total marks: 3

Question 18 - (2 marks available)

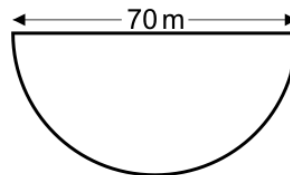
Describe fully the **single** transformation that maps shape **A** onto shape **B**.



Total marks: 2

Question 19 - (5 marks available)

A farmer has a field in the shape of a semicircle.
A sketch of the field is shown.



The farmer asks a builder to raise a fence around
the edge of the field. He gets the following quotation.

Total cost = £32.65 per metre of fence + £150 for each day's work

The builder estimates that it will take five days to build the fence.

Work out the total cost.

Total marks: 5

Question 20 - (5 marks available)

a) Simplify $e^5 \times e^4$ (1)

b) Simplify $(4ab^2)^3$ (2)

c) Simplify $\frac{36n^7p^5}{9n^4p}$ (2)

Total marks: 5

Question 21 - (3 marks available)

a) Find the lowest common multiple (LCM) of 36 and 48

Note: Please make your final answer clear by writing LCM = ...

(2)

$$A = 2 \times 3^4 \times 5$$

$$B = 2^3 \times 3^2 \times 5^2$$

b) Write down the highest common factor (HCF) of A and B.

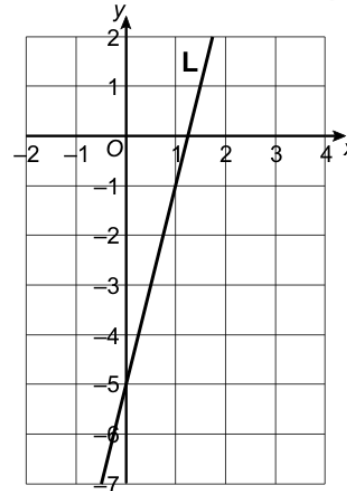
HCF =

(1)

Total marks: 3

Question 22 - (3 marks available)

The line L is shown on the grid.



Find an equation for L.
Give your answer in the form $y = mx + c$

Total marks: 3

Question 23 - (5 marks available)

Emma buys a camping van for £23500 plus VAT at 20%.

She pays a deposit for the camping van.

She then pays the rest of the cost in 18 equal payments of £940 each month.

Find the ratio of the deposit Emma pays to the total of the 18 equal payments.

Give your answer in its simplest form.

Total marks: 5

Question 24 - (6 marks available)

a) Complete the table of values for $y = x^2 - x - 2$

x	-3	-2	-1	0	1	2	3
y	10			-2			

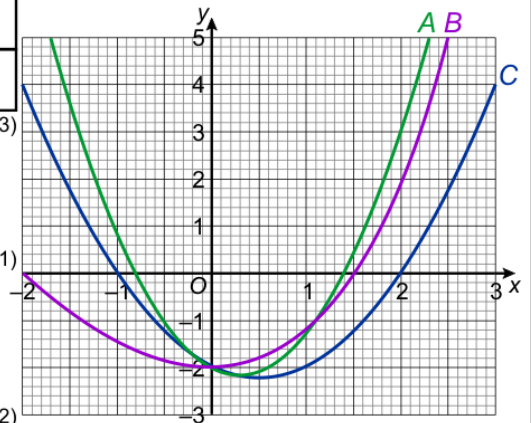
(3)

b) Which of the three curves drawn corresponds to $y = x^2 - x - 2$?

c) Use your graph to find estimates of the solutions to the equation $x^2 - x - 2 = 3$

(1)

(2)



Total marks: 6

Question 25 - (3 marks available)

A force of 90 Newtons is applied to a 20 cm^2 surface.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The force applied is then increased by 5 Newtons and the surface area is increased by 5 cm^2 .

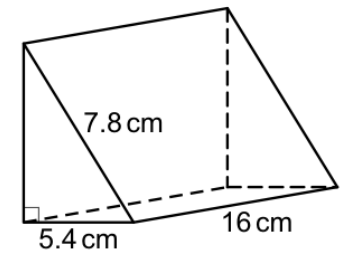
Complete the following sentence describing the outcome of the increases.

The pressure *by* *%.*

Total marks: 3

Question 26 - (5 marks available)

Here is a triangular prism.



Work out the volume of the prism in cm^3 .
Give your answer correct to 3 significant figures.

Total marks: 5