

Non-calculator Questions

Edexcel

1.

Here is a list of numbers.

29 31 46 43 29 31 38 34 43 35 43

Write down the mode of these numbers.

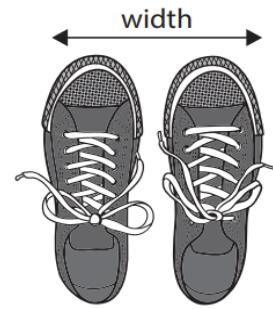
(1)

2.

Uditi wants to make a shoe tray.
The tray will hold rows of shoes.
She wants each row to hold 6 pairs of shoes.

Uditi measures the width of 5 pairs of her shoes.
Here are the results in cm.

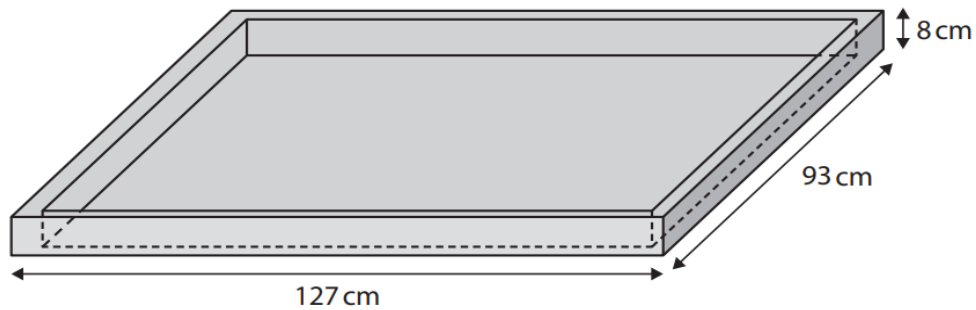
18.2 19.7 19.4 18.6 18.9



To find the total width of 6 pairs of shoes Uditi will multiply the median width of these pairs of shoes by 6

The width of the base of the tray will need to be 10% more than the total width of 6 pairs of shoes and have an extra 3 cm at each end of the tray for a frame.

Uditi draws this diagram of the largest shoe tray she can make with the wood she has.



Uditi thinks this tray can hold 6 pairs of her shoes in a row.

Is she correct?
Show why you think this.

(6)

NCFE

3.

Zak looks at the weather forecast.

This table shows the highest daily temperatures forecast for the next eight days.

Day	1	2	3	4	5	6	7	8	9	10
Temperature °C	15	19	17	15	15	20	19	16		

- The median of the **ten** temperatures is 17.5°C and
- the **ten** temperatures have two modes.

Use this information to find the forecast temperatures for **Day 9** and **Day 10**.

[2 marks]

Your answer:

Day 9:

Day 10:

4.

Noah sells a bundle of spare blocks online.

The bundle weighs 3120 g

There are six types of block in the bundle:

Block type	Weight of each block (g)
A	2.7
B	4.5
C	7.4
D	2.9
E	3.5
F	9.0

Use the median weight to work out an estimate of the **number** of blocks in the bundle.

[3 marks]

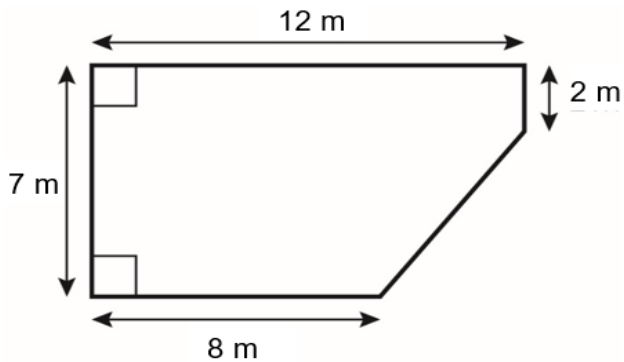
Blank area for working out the solution.

Your answer:

blocks

5.

Jessie will let this unit in the shopping centre:



Not drawn accurately

She has information about the floor areas of other available units in the shopping centre:

Unit floor area (m ²)	51.1	82.3	67.6	49.8	71.2	40.7	59.4	68.9	90.2
-----------------------------------	------	------	------	------	------	------	------	------	------

Jessie thinks that the unit she will let has a floor area 12% larger than the median floor area of other available units.

Is she correct?

Show how you decide.

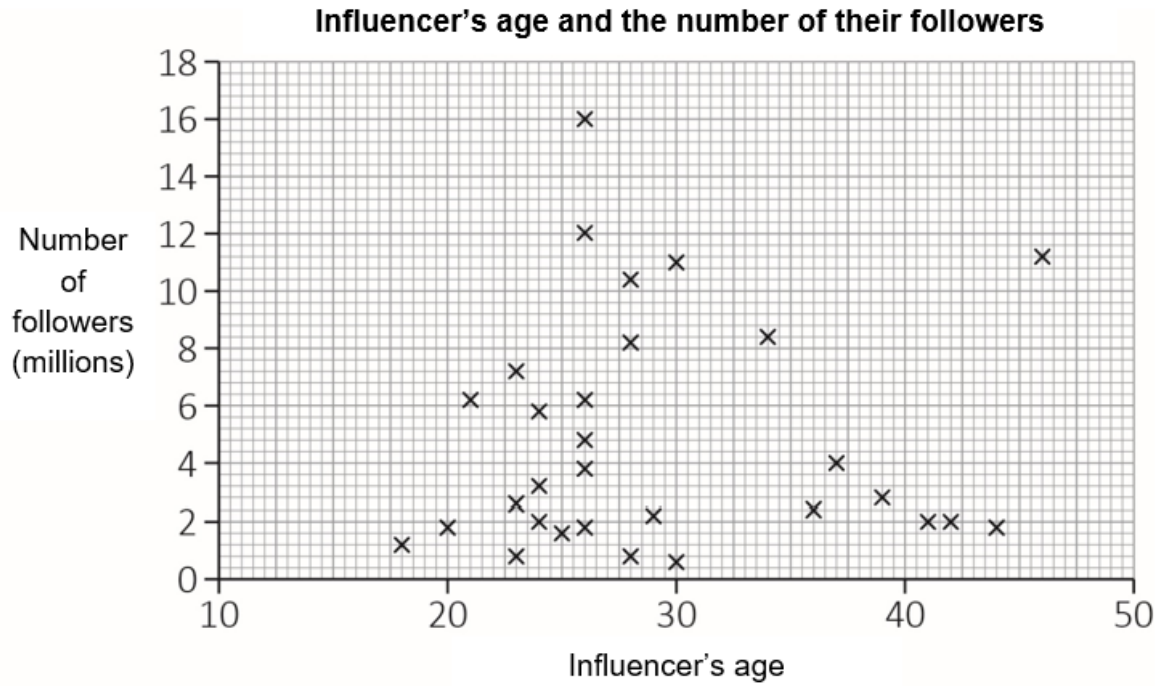
[5 marks]

Your answer:

6.

Tarah has this scatter diagram.

The diagram shows the ages of the top influencers in the UK and the numbers of their followers.



What is the modal age of these influencers?

[1 mark]

Your answer:

years old

City & Guilds

7.

A manager wants to give a pay rise to everyone who is paid less than the average salary. This table shows the annual salaries of the employees in the company.

Employee	Salary (in £ thousands)
AJ	16
TM	23
WF	23
SW	22
MT	15.5
RD	18.5
JR	20
LS	23
PB	36

Tick all of the employees who are paid less than the median salary.

(1 mark)

8.

An inspector checks the weights of bags of crisps.

Weight of bags of crisps in grams(g)				
24.4	25.5	25.0	25.3	24.4
26.5	25.5	24.9	24.4	25.5
25.5	25.1	25.5	24.2	24.5

What is the modal weight for the bags of crisps?

g

(1 mark)

Highfield

9.

Calculate the median.

10 36 48 36 92 45 50 21 15 19 36 24

Write your answer in the box below.

(2 marks)

Answer: _____

10.

Calculate the median and the mode of this set of weights.

9kg 84kg 51kg 12kg 90kg 27kg 28kg 42kg 51kg

Write the answers in the box below.

(2 marks)

<p>Median: _____ Mode: _____</p>

11.

Calculate the median and the mode of this set of data:

5 15 24 4 15 40 32 23 9

Write the answers in the box below.

(2 marks)

Median: _____ Mode: _____

AQA

12.

Here are nine numbers.

1 2 2 4 6 7 7 7 9

Work out the median.

Circle your answer.

[1 mark]

5 6 7 8

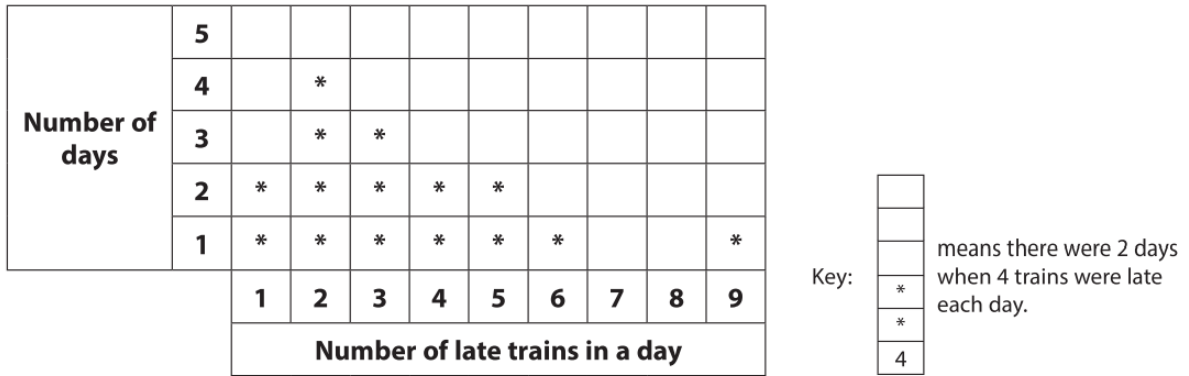
Calculator Questions

Edexcel

1.

Lena recorded the number of late trains at a station in a day over a period of time.

She shows this information in a diagram.



(a) For this information work out the median number of late trains in a day. (2)

Lena says 'The median number of late trains in a day, from this information, is a good estimate of the average number of trains late over the period of time.'

(b) Is Lena correct?
Explain why you think this. (1)

NCFE

2.

The site was open on Saturday and Sunday for 26 weekends during last year.

This table shows the number of days each volunteer attends out of the 52 days available.

The information for Chen is missing.

Volunteer	Number of days
Ada	48
Barry	25
Tim	30
Chris	24
Gwen	43
Sia	39
Rita	40
Rav	18
Jon	35
Chen	

Chen says that the mode of the 9 values is 48

Is she correct?

Explain your answer.

[1 mark]

3.

The median number of days for the 10 volunteers including Chen was 33.5

What fraction of the days did Chen attend?

Give the fraction in its simplest form.

[3 marks]

Blank area for working out the answer.

Your answer:

Blank box for the final answer.

4.

The table shows the number of points Lottie scored in Games 7 to 12 this season.

Her median score for these games is 25% higher than her median for Games 1 to 6.

Game	7	8	9	10	11	12
Score	6	10	6	14	12	10

After Game 6, Lottie's Dad said that he would increase the money in her money box by 20% each time she scored more than her median for the first six games.

Lottie started with £50 in her money box.

How much money will she have after Game 12?

[5 marks]

Your answer:

£

5.

Rani is asked to work out the average number of orders per month last year.

The table shows the number of orders each month.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Number of orders	180	182	129	146	138	45	45	125	148	132	195	202

Work out both the median **and** the mode for Rani **and** give one reason why the median is the better average for her to use.

[4 marks]

Your answer:

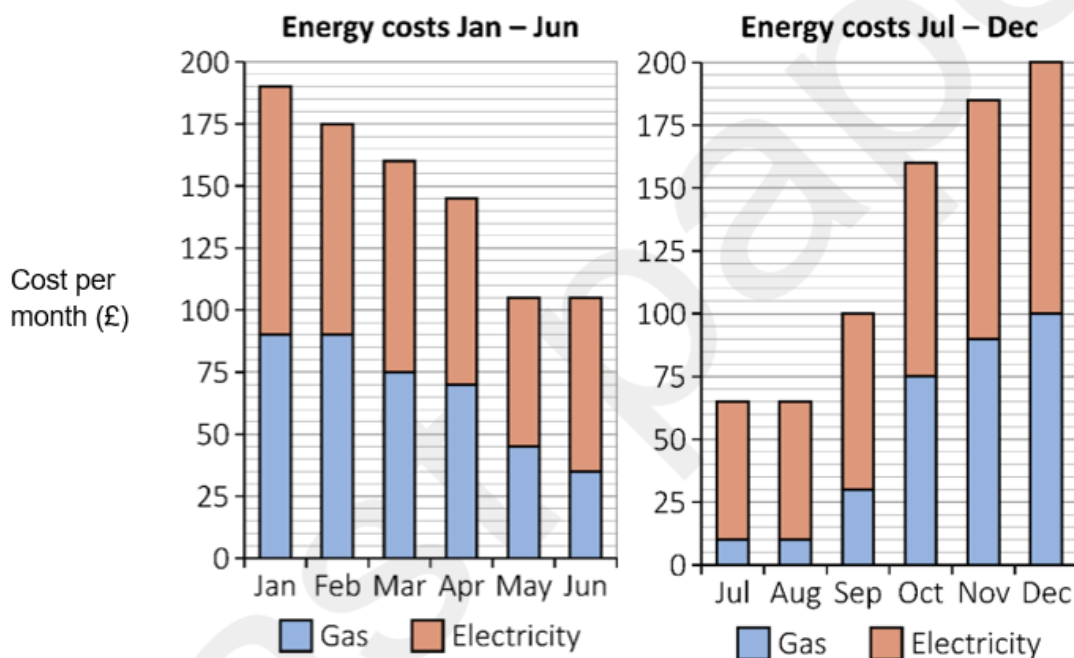
6.

Eli needs to complete a project on energy costs for his college course.

Eli's family currently use Xpower for gas and electricity.
They pay monthly by direct debit.

Xpower uses the **median** monthly cost for January to June to set the amount of their monthly direct debit payments for July to December.

The graphs show their energy costs for last year.



Eli works out that they have paid too much between July and December.

Calculate the percentage by which they have overpaid.

[4 marks]

Blank area for working out the answer.

Your answer:

%

7.

Pete is a catering student.
He has been given a project testing fruit juicers.

Pete is testing the SuperJuicer and the Blitz-It juicer.

Pete juices 100 g of strawberries in the Blitz-It juicer.
He repeats this 7 times.

Test number	Volume of juice
1	73 ml
2	66 ml
3	70 ml
4	65 ml
5	67 ml
6	71 ml
7	72 ml

Calculate the median volume of strawberry juice produced by the Blitz-It juicer.

[1 mark]

Your answer:

ml

8.

Emma employs Hans.

She pays Hans a bonus when he sells a car.

The bonus is 1.5% of the price of the car.

The available makes of cars are:

Make of cars	Price
A	£14 750
B	£15 800
C	£16 000
D	£15 800
E	£19 800
F	£15 800
G	£30 500
H	£23 650

How many cars would Hans have to sell at the modal price to get a bonus of at least £7500?

You must show your working.

[5 marks]

PAST PAPER

Your answer:

cars

9.

Judy installs some water taps in the building.

She keeps a record of the flow rate for each tap she installs.

Tap	A	B	C	D	E	F	G	H
Flow rate (litres/minute)	5.9	5.5	6.1	6.5	6.3	6.0	6.1	5.8

Judy installs tap J.

She checks the flow rate of tap J by filling up an empty 1.6 litre jug with water in 15 seconds.

Judy thinks that tap J has a greater flow rate than the median flow rate of the other eight taps she installed.

Is she correct?

Show how you decide.

[4 marks]

PAST PAPER

Your answer:

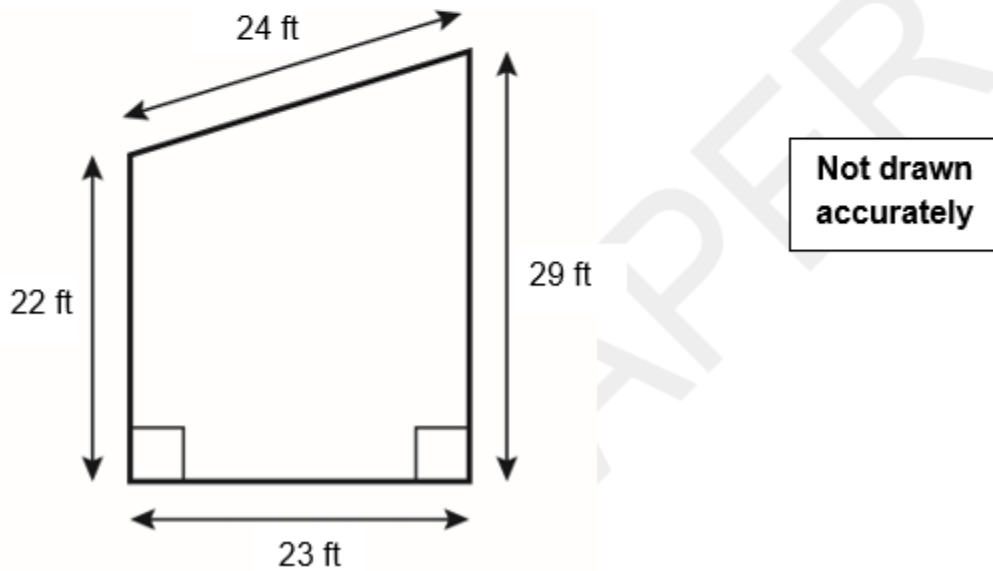
10.

Chris advertises 12 flats for sale.

The table shows the floor area of flats 1 - 11

Flat	1	2	3	4	5	6	7	8	9	10	11
Floor area (sq ft)	496	687	550	496	840	687	550	496	496	840	550

Chris has this floor plan of flat 12.



By what percentage is the floor area of flat 12 greater than the median floor area of flats 1 - 11?

Give your answer to 1 decimal place.

[5 marks]

PAST PAPER

Your answer:

%

11.

Mel needs to write a report about the income from tuition fees.

She has this information about tuition fees:

Course	Fee
A	£390
B	£650
C	£720
D	£460
E	£390
F	£980
G	£720
H	£980
J	£720

Mel writes in her report,

‘The college has a £1.7 million income target this year.’

If 1476 students enrol onto courses and pay the modal tuition fee, the college will achieve more than $\frac{5}{8}$ of this target.

Is this statement correct?

Show how you decide.

[4 marks]

Your answer:

City & Guilds

12.

155	125	145	90	125	150	155
90	100	125	178	95	125	180

What is the mode of these numbers?

(1 mark)

13.

A city council wants to encourage car sharing to cut pollution.

It takes a survey of cars entering the city and find these results.

Average people in a car entering the city	
Mean	Mode
1.65	1

It introduces a congestion charge for cars with only one person in the car.

It wants to know if the congestion charge is effective in making people share cars.

It takes another survey of the number of people in cars entering the city.

Number of people in a car	Number of cars after the congestion charge is introduced (frequency)
1	17
2	54
3	14
4	8
5	2
6+	0

Is the congestion charge effective?

Make two comments using the figures provided

Is the congestion charge effective? (tick one box) Yes No

Show your working

Comment 1

Comment 2

(6 marks)

Highfield

14.

Calculate the median of the following set of numbers.

234 345 224 564 435 315 654 671

Show your working out and write the answer in the box below.

(2 marks)

Answer: _____

15.

What is the median of these weights?

2.54kg 3.91kg 3.75kg 3.78kg 2.84kg 3.89kg 4.05kg 2.96kg

Show your working out and write the answer in the box below.

(2 marks)

Answer: _____ kg

Open Awards

16.

Find the mode in the following set of numbers.

(1 mark)

8 8.5 8 7 11 23 9 11 7.5 11 7

Write your answer in this box.

17.

Calculate the median of the following set of numbers.

(2 marks)

10 10.5 11 12 15 23 9 9.5

Show your calculations and/or workings out here:

Write your answer in this box.

AQA

18.

A set of numbers is 4 6 6 7 8 8 8 9

Circle the mode.

[1 mark]

5

7

7.5

8