

**Non-calculator Questions**

Edexcel

1.

Here is some information about the number of houses sold by 20 sales people.

<b>Number of houses sold</b>	<b>Frequency</b>		
1 – 5	7		
6 – 10	6		
11 – 15	5		
16 – 20	2		

Work out an estimate for the mean number of houses sold.

(3)

Level 2 Mean of Grouped Data Exam Questions

2.

Emma is the recruitment manager in a large company.

She has this information about the number of workers in each of the 20 offices of the company.

<b>number of workers</b>	<b>number of offices</b>
1 to 20	9
21 to 40	8
41 to 60	2
61 to 80	1

Emma estimates the mean number of workers in an office as 30

- (a) Is Emma correct?  
Show why you think this.

(3)

NCFE

3.

Asha swims 1 km each time she goes to the pool.

She always records how long this takes her.

The table shows her data for 10 swims.

Time taken to swim 1 km (minutes)	Number of swims
$25 < \text{time} \leq 26$	2
$26 < \text{time} \leq 27$	4
$27 < \text{time} \leq 28$	4

Estimate Asha's mean time to swim 1 km

[3 marks]

Your answer:

minutes

4.

Hannah wants to know how much money she might get for a toy car if she sells it on an online auction website.

She finds that the same make of toy car has been sold for different prices.

Price paid on online auction website	Number of toy cars sold
£0 - £9.99	6
£10 - £19.99	5
£20 - £29.99	6
£30 - £39.99	3

Use the data to calculate the estimated mean price paid for the toy car on the online auction website.

**[3 marks]**

Your answer:

£

5.

This table shows the price charged by 90 influencers for a sponsored post in 2020:

Price ( $x$ ) (£ per post)	Number of influencers
$0 \leq x < 100$	37
$100 \leq x < 250$	35
$250 \leq x < 500$	16
$500 \leq x < 1000$	2
<b>Total</b>	<b>90</b>

Tarah charges £171.99 per post.

She works out an estimate of the mean charge per sponsored post for all the other influencers.

Tarah thinks she charges less than the estimated mean.

Is she correct?

Show how you decide.

[3 marks]

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Your answer:

**Calculator Questions**

Edexcel

1.

Nikos owns a restaurant.

The table shows information about the number of customers that visited the restaurant on each of the 31 nights in August.

Number of customers	Frequency		
1 – 15	2		
16 – 30	7		
31 – 45	12		
46 – 60	10		

The mean number of customers per night in July was 32

Nikos thinks the mean number of customers per night in August was more than the mean number of customers per night in July.

(a) Is Nikos correct?  
Show why you think this. (3)



(b) Show a check of your mean calculation. (1)

NCFE

2.

Dan wants to expand his business.

Next year he plans to clean patios from 8.30am to 3.30pm, Monday to Friday for 26 weeks during the spring and summer.

This table shows how long each job took Dan **this year**. The times include travel time.

Time per cleaning job	Number of jobs
$30 < \text{time} \leq 60$ minutes	25
$60 < \text{time} \leq 90$ minutes	36
$90 < \text{time} \leq 120$ minutes	45
$120 < \text{time} \leq 150$ minutes	21
<b>Total</b>	127

Use the data to estimate how many patios Dan can clean **next year** if he works the hours planned.

**[5 marks]**

Your answer:

**patios**

3.

A Department of Transport survey collected data on the percentages of cars travelling at different speeds on a motorway.

The table shows the results of this survey:

Speed (mph)	Percentage of cars
$40 \leq \text{speed} < 50$	4
$50 \leq \text{speed} < 60$	13
$60 \leq \text{speed} < 70$	36
$70 \leq \text{speed} < 90$	47

Work out an estimate for the mean speed.

**[2 marks]**

Your answer:

**mph**



4.

Eli looks for information on the cost of leaving gadgets on standby when they are not being used.

Eli's gadgets are a TV, computer, printer, phone charger and two games consoles.

He finds several reports stating how much electricity a gadget uses when left on standby, but they do not agree.

Annual saving per gadget	Number of reports
£0 - £4.99	1
£5 - £9.99	4
£10 - £14.99	5
£15 - £19.99	2

Use an estimate of the mean to find how much money Eli could save if he switched off his gadgets, instead of leaving them on standby.

**[4 marks]**

Your answer:

£

5.

Some people donate to CHAD by giving a one-off donation.

The table below shows the one-off donations made last year:

Size of one-off donation (£d)	Number of donors
$0 < d \leq 20$	48
$20 < d \leq 40$	146
$40 < d \leq 60$	74
$60 < d \leq 80$	32
<b>Total:</b>	<b>300</b>

Other people donate by paying regular amounts.

Last year, CHAD had 150 of these regular donors who donated £7500 in total.

Sam works out an estimate for the mean of the one-off donations last year.

He compares this with the mean for regular donors last year.

Sam says,

“The mean amount donated last year was higher for the one-off donors than for the regular donors”.

Is Sam correct?

Show how you decide.

**[4 marks]**

Blank area for showing the solution to the question.

Your answer:

Box for the final answer.

6.

The water company needs to reduce water leakage.

This data shows the volumes of water leaked in 2019:

Water leaked (millions of litres per day)	Number of days
$0 \leq w < 200$	87
$200 \leq w < 400$	105
$400 \leq w < 600$	153
$600 \leq w < 800$	20
<b>Total</b>	<b>365</b>

Use the data to work out an estimate of the mean amount of water leaked per day.

Give your answer to the nearest whole number.

**[3 marks]**

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Your answer:	millions of litres per day

City & Guilds

7.

A photographer increases the price he charges to print photographs.  
He wants to know if this affects his sales.

Last week, before the price increase, the average number of photos ordered was 12.

This week customers ordered:

Photos ordered	Number of customers
1 - 10	26
11 - 20	14
21 - 30	6
31 - 40	4
41 - 50	0
51 - 60	0

Does the price increase seem to have had an effect on the number of prints ordered per customer?  
Explain your answer. Include calculations to support your decision.

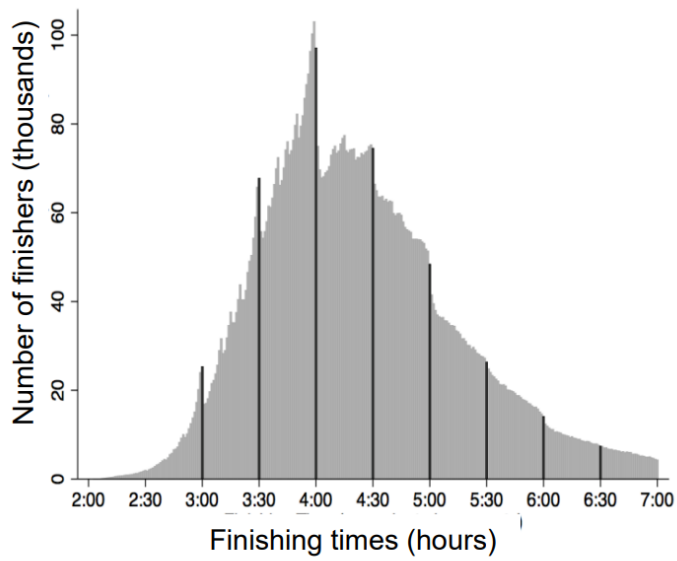
Decision (yes/no)

Explanation and supporting calculations

(4 marks)

8.

The chart shows finishing times of marathon runners.



A report states that most of the runners finished in under 4 hours.

Is the report correct?

Explain your decision.

Decision (tick one box) Yes  No

Explanation

Large empty text area for providing an explanation.

(1 mark)

9.

A supermarket buyer compares large eggs from two suppliers.

She wants to buy the largest eggs.

The table shows the masses of a sample of large eggs from Supplier A.

Weights of large eggs (Supplier A)	
Weight in grams	Number of eggs
$63 < g \leq 65$	22
$65 < g \leq 67$	27
$67 < g \leq 69$	26
$69 < g \leq 71$	15
$71 < g \leq 73$	10

A similar sample taken from supplier B gives a mean value of 66.5g

Which supplier should the buyer use?  
Explain your decision.

Decision (*tick one box*)

Supplier A

Supplier B

Show all your working

Explanation and supporting calculations.

(4 marks)

10.

A golf coach wants to tell a beginner how he is performing.

He tells the beginner that he should be able to hit the ball 150 yards on average.

He tests the beginner and records the distance of each hit.

Distance travelled (d) in yards	Frequency
$135 \leq d < 140$	4
$140 \leq d < 145$	13
$145 \leq d < 150$	17
$150 \leq d < 155$	6

Is the beginner performing at the average level? Explain your answer using figures

**Show your working**

**Is the beginner performing at the average level?**

(tick one box) Yes  No

**Explanation**

**(5 marks)**



Level 2 Mean of Grouped Data Exam Questions

Highfield

11.

This table shows the number of different sized pipes that have been used at Highfield Builders in January. The pipes are **grouped** according to the size of their diameter.

January: Number of Pipes Used (by Grouped Size)					
Diameter (cm)	35-39	40-44	45-49	50-54	55-59
Frequency	8	10	13	3	1

The manager thinks that the mean diameter of pipe used must be in the 45-49 cm group as this is the group most used.

**Is the manager correct?**

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

*(5 marks)*

Answer: \_\_\_\_\_

Level 2 Mean of Grouped Data Exam Questions

12.

You are looking at the journey times of your deliveries over 2 months.

This table shows the number of journeys you made each month and their duration.

Journey time (hours)	April	May
0 to 2	7	13
More than 2 to 4	4	10
More than 4 to 6	11	7
More than 6 to 8	5	3
More than 8 to 10	6	1

Use the data to estimate the difference in the mean journey time between the 2 groups.

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

(7 marks)

Answer: \_\_\_\_\_ hours

Level 2 Mean of Grouped Data Exam Questions

13.

The bank receives lots of telephone enquiries and your manager is looking at your call statistics. The table below shows the number of calls you have answered today and the duration of each call:

Length of call	Frequency
Up to 10 minutes	6
More than 10 minutes to 20 minutes	8
More than 20 minutes to 30 minutes	2
More than 30 minutes to 40 minutes	15
More than 40 minutes to 50 minutes	9
More than 50 minutes to 60 minutes	4

**Estimate the mean length of the calls you receive. Round your answer to the nearest whole minute.**

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

*(6 marks)*

Answer: \_\_\_\_\_ minutes

Level 2 Mean of Grouped Data Exam Questions

14.

This table shows the weights, in kg, of 12 people.

Weight (W)	Frequency
$55 \leq W < 60$	4
$60 \leq W < 65$	6
$65 \leq W < 70$	2

**Estimate the mean weight of the 12 people.**

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

*(2 marks)*

Answer: \_\_\_\_\_

AQA

15.

**Fashion blogger**

Alex is a fashion blogger.

Companies pay her to promote their goods.

Alex writes 30 posts promoting Company A.

The table shows the number of views of each post.

Number of views, $x$	Frequency		
$0 \leq x < 30\,000$	5		
$30\,000 \leq x < 60\,000$	9		
$60\,000 \leq x < 90\,000$	12		
$90\,000 \leq x < 120\,000$	4		
	Total = 30		

Alex also writes 23 posts promoting Company B.

The total number of views of these posts is 1 223 600

Which company receives the **higher** average number of views, A or B?

You **must** show your working.

**[4 marks]**

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16.

This year, 20 people completed the sponsored swim.

The table shows information about the sponsor money collected.

Money (£ $x$ )	Frequency	Mid-point	
$0 < x \leq 10$	7		
$10 < x \leq 20$	4		
$20 < x \leq 30$	6		
$30 < x \leq 40$	1		
$40 < x \leq 50$	2		
	Total = 20		

Last year, the mean amount collected per swimmer was £14.85

The charity organiser says,

“This year’s mean amount is **more than** £3 higher than last year’s.”

Show your working to support this statement.

**[5 marks]**

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