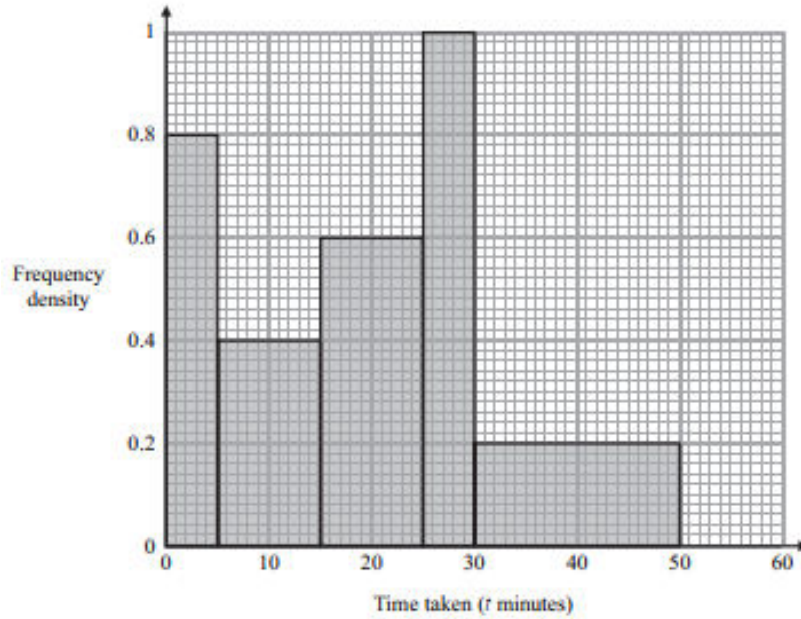


**FREQUENCY TABLES**

**Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier**

**1.**

17 The histogram shows information about the times taken by some students to finish a puzzle.



(a) Complete the frequency table for this information.

Time taken ( $t$ minutes)	Frequency
$0 < t \leq 5$	4
$5 < t \leq 15$	
$15 < t \leq 25$	
$25 < t \leq 30$	
$30 < t \leq 50$	

(2)

(b) Find an estimate for the lower quartile of the times taken to finish the puzzle.

..... minutes  
(2)

(Total for Question 17 is 4 marks)

Pearson Edexcel - Thursday 4 June 2015 - Paper 1 (Non-Calculator) Higher Tier

2.

16 The table shows information about the times taken by 100 people in a fun run.

Time ( $t$ minutes)	Frequency
$20 < t \leq 30$	4
$30 < t \leq 40$	16
$40 < t \leq 50$	36
$50 < t \leq 60$	24
$60 < t \leq 70$	14
$70 < t \leq 80$	6

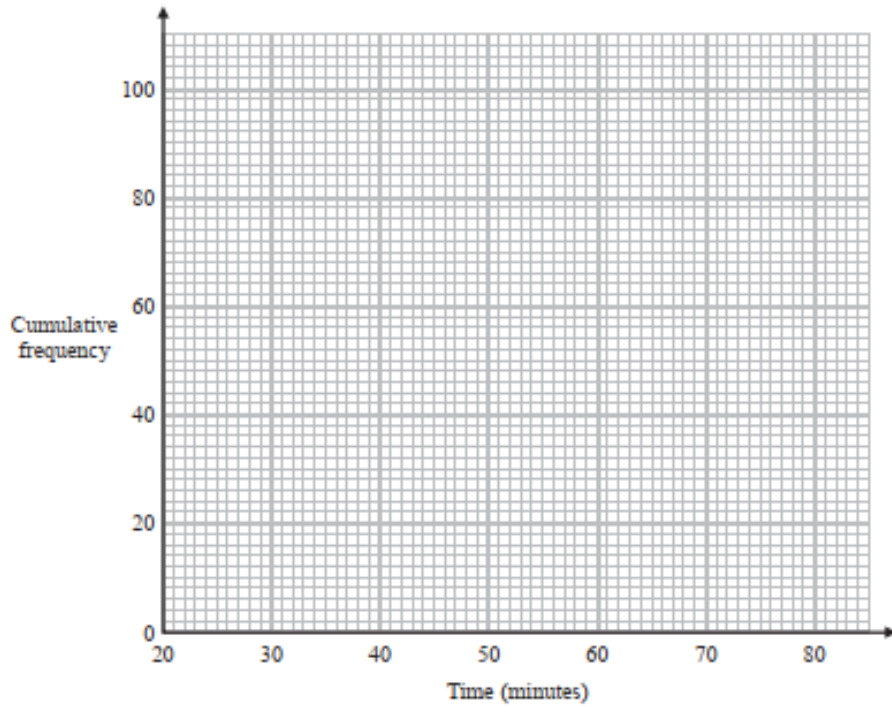
(a) Complete the cumulative frequency table for this information.

Time ( $t$ minutes)	Cumulative frequency
$20 < t \leq 30$	
$20 < t \leq 40$	
$20 < t \leq 50$	
$20 < t \leq 60$	
$20 < t \leq 70$	
$20 < t \leq 80$	

(1)

(b) On the grid, draw a cumulative frequency graph for your table.

(2)



(c) Use your graph to find an estimate for the median time.

..... minutes  
(1)

(d) Use your graph to find an estimate for the number of people who took longer than 63 minutes.

.....  
(2)

(Total for Question 16 is 6 marks)

18 The owners of a car park recorded the number of cars parked at 12 noon each day.

The table shows information about the number of cars parked in the car park at 12 noon each day in July and in December.

	July	December
Least number of cars	75	100
Lower quartile	90	115
Median	95	130
Upper quartile	150	150
Greatest number of cars	178	180

(a) What type of diagram could you draw to represent the information for each month?

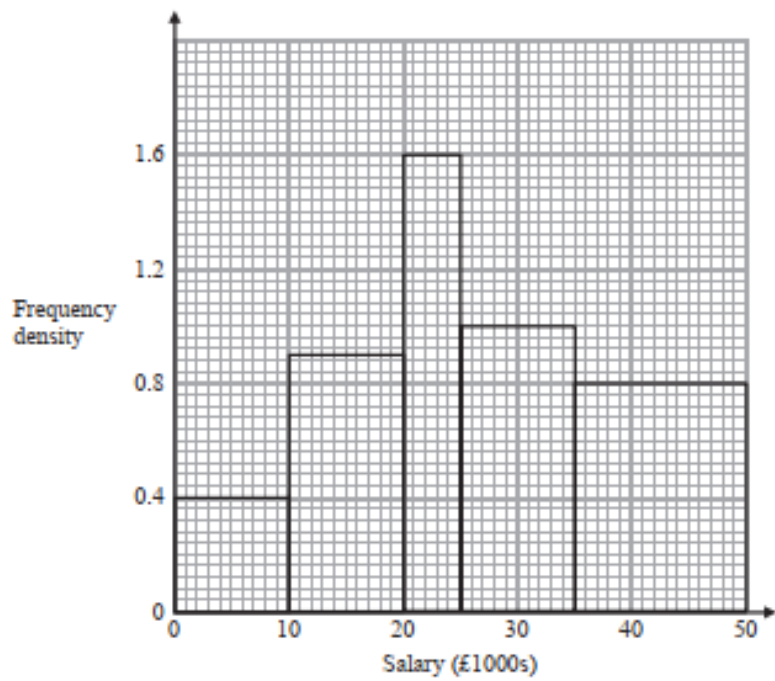
.....  
(1)

\*(b) Compare the distribution of the number of cars recorded in July with the distribution of the number of cars recorded in December.

.....  
.....  
.....  
.....  
(2)

.....  
**(Total for Question 18 is 3 marks)**

26 The histogram shows some information about the salaries of a sample of people.



(a) Use the histogram to complete the frequency table.

Salary ( $p$ ) in £1000s	Frequency
$0 < p \leq 10$	4
$10 < p \leq 20$	
$20 < p \leq 25$	
$25 < p \leq 35$	
$35 < p \leq 50$	

(2)

(b) Work out the proportion of people in the sample who have a salary greater than £40 000

.....  
(2)

(c) Find an estimate for the median salary.

£.....  
(2)

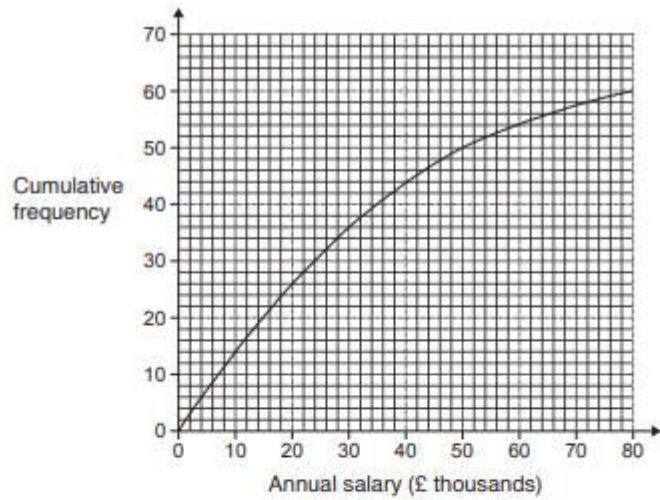
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(Total for Question 26 is 6 marks)

**OCR GCSE – Tuesday 5 November 2019 – Paper 6 (Calculator) Higher Tier**

**5.**

- 12 The cumulative frequency graph summarises the annual salary,  $p$  (£ thousands), of the 60 workers in a factory.



- (a) Use the graph to estimate the median annual salary.

(a) £ ..... thousands [1]

- (b) Complete this cumulative frequency table.

Annual salary, $p$ (£ thousands)	Cumulative frequency
$p \leq 10$	
$p \leq 20$	
$p \leq 30$	
$p \leq 50$	
$p \leq 80$	

[2]

(c) Use the information in the cumulative frequency table to calculate an estimate of the mean annual salary.

(c) £ ..... thousands [5]

(d) Explain why your estimate of the median is more reliable than your estimate of the mean.

.....  
..... [1]



6.

- 2 The police record the speed of vehicles passing a speed checkpoint.  
The speeds are recorded in the table below.

Speed ( $s$ mph)	Number of vehicles		
$0 < s \leq 20$	5		
$20 < s \leq 40$	8		
$40 < s \leq 50$	37		
$50 < s \leq 60$	47		
$60 < s \leq 80$	3		

- (a) Calculate an estimate of the mean speed of the vehicles.

(a) ..... mph [4]

- (b) Explain why it is not possible to use the information from this table to calculate the **exact** value of the mean speed.

.....  
.....  
..... [1]

7.

5 The table shows the relative frequencies of the results for a football team after a number of games.

<b>Result of game</b>	won	lost	drew
<b>Relative frequency</b>	0.2	0.45	

(a) Complete the table. [2]

(b) The team lost 10 more games than they won.

How many games did the team play altogether?

(b) ..... [3]

OCR GSCE – Wednesday 8 November 2017 – Paper 6 (Calculator) Higher Tier

8.

- 3 A shop records the time taken by its customers to complete a purchase on its website. The results from one day are summarised in this table.

Time taken ( $t$ minutes)	Number of customers		
$0 < t \leq 3$	6		
$3 < t \leq 6$	10		
$6 < t \leq 9$	6		
$9 < t \leq 12$	2		
$12 < t \leq 15$	1		

- (a) Calculate an estimate of the mean time taken.

(a) ..... minutes [4]

- (b) Explain why it is not possible to use the information from this table to calculate the **exact** value of the mean time taken.

.....  
.....  
..... [1]

9.

- 9 George is the manager of a shoe shop.  
He samples 50 of his customers and asks them about the **one** style of shoe they would buy next.  
The table shows his results.

Style of shoe	Number of customers
Laced shoes	18
Boots	15
Sandals	8
Trainers	5
Other	4

George buys 1000 pairs of shoes with the number of each style based on his survey results.

How many pairs of sandals should he buy?  
Write down any assumption you make about his sample.

.....  
..... [3]

10.

16 The number of goals scored by 20 players in a season is shown.

Number of goals	Frequency	Midpoint	
0 to 4	6		
5 to 9	11		
10 to 14	3		
	Total = 20		

Work out an estimate of the mean number of goals per player.

Give your answer as a decimal.

**[3 marks]**

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Answer \_\_\_\_\_

11.

- 9 In a sport, injury time is added time played at the end of a match.  
The table shows the injury time,  $t$  (minutes) played in 380 matches.

Injury time, $t$ (minutes)	Frequency
$0 < t \leq 2$	59
$2 < t \leq 4$	158
$4 < t \leq 6$	106
$6 < t \leq 8$	45
$8 < t \leq 10$	12

- 9 (a) Circle the **two** words that describe the data.

[1 mark]

continuous      discrete      grouped      ungrouped

- 9 (b) Which class interval contains the median?  
You **must** show your working.

[2 marks]

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Answer \_\_\_\_\_  $< t \leq$  \_\_\_\_\_

9 (c) What percentage of the matches had **more than** 6 minutes of injury time?

[2 marks]

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Answer \_\_\_\_\_ %

AQA GCSE – Thursday 6 June 2019 – Paper 2 (Calculator) Higher Tier

12.

12

A biased coin is thrown 250 times.

The relative frequency of Heads is worked out after every 50 throws.

<b>Total number of throws</b>	50	100	150	200	250
<b>Relative frequency</b>	0.4	0.29	0.4	0.32	0.3

Circle the best estimate of the probability of Heads.

[1 mark]

0.3

0.32

0.342

0.4

AQA GCSE – Tuesday 11 June 2019 – Paper 3 (Calculator) Higher Tier

13.

17 A factory makes kettles.

Four samples of kettles are tested for faults.

Each sample has size 200

Here are the relative frequencies of faulty kettles in the samples.

Sample	P	Q	R	S
Relative frequency	0.03	0.035	0.015	0.01

Work out the range of the number of faulty kettles in the four samples.

[3 marks]

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Answer \_\_\_\_\_



**AQA GCSE – Tuesday 6 November 2018 – Paper 1 (Non - Calculator) Higher Tier**

**14.**

**8** Kim works at an airport in the UK.  
She records the number of planes landing between 10 am and 2 pm each day.

The table shows the data for the first 10 days in January.

Day	1	2	3	4	5	6	7	8	9	10
Number of planes	148	151	147	155	153	147	155	102	151	154

**8 (a)** The airport was affected by fog on one of the days.

Which day do you think it was?

Give a reason for your answer.

**[1 mark]**

Day \_\_\_\_\_

Reason \_\_\_\_\_

\_\_\_\_\_

**8 (b)** Kim uses the data to predict how many planes will land at the airport in a year.

In her method, she

uses an estimate of 150 planes in each 4-hour period throughout the day

assumes the same number of planes each day.

Work out her prediction.

**[3 marks]**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Answer \_\_\_\_\_

- 8 (c) In fact,  
fewer planes land in winter than in summer  
fewer planes land at night than during the day.

What does this tell you about Kim's prediction?

Tick **one** box.

Her prediction is too low

Her prediction is too high

Her prediction could be too low or too high

Give a reason for your answer.

**[2 marks]**

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AQA GCSE – Monday 24 May 2018 – Paper 1 (Non - Calculator) Higher Tier

15.

**8** A coin is thrown 50 times.  
It lands on heads 31 times.

**8 (a)** Write down the relative frequency it lands on heads.

**[1 mark]**

Answer \_\_\_\_\_

**8 (b)** Raj says,  
"The coin is biased towards heads."

Use the data to give a reason why he might be correct.

**[1 mark]**

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- 8 The table shows information about the distances walked by 120 students on their way to school one week.

Distance, $x$ (miles)	Frequency		
$0 < x \leq 5$	20		
$5 < x \leq 10$	48		
$10 < x \leq 15$	30		
$15 < x \leq 20$	22		
	Total = 120		

Work out an estimate for the mean distance.

[3 marks]

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Answer \_\_\_\_\_ miles

17.

7 Here is some information about the times taken by 40 people to fill in a form.

Time, $t$ minutes	Number of people
$0 < t \leq 5$	3
$5 < t \leq 10$	9
$10 < t \leq 15$	11
$15 < t \leq 20$	17

In which class interval is the median?

Circle your answer.

[1 mark]

$0 < t \leq 5$        $5 < t \leq 10$        $10 < t \leq 15$        $15 < t \leq 20$

18.

- 6 The table shows information about the times for 10 people to complete a task.

Time, $t$ (minutes)	Frequency
$0 < t \leq 20$	1
$20 < t \leq 40$	6
$40 < t \leq 60$	3

These statements are about the mean and range of the actual times.

Tick the correct box for each statement.

[4 marks]

	True	False
The mean could be less than 20 minutes	<input type="checkbox"/>	<input type="checkbox"/>
The mean could be more than 40 minutes	<input type="checkbox"/>	<input type="checkbox"/>
The mean could be less than 40 minutes	<input type="checkbox"/>	<input type="checkbox"/>
The range could be more than 40 minutes	<input type="checkbox"/>	<input type="checkbox"/>
The range could be less than 40 minutes	<input type="checkbox"/>	<input type="checkbox"/>
The range could be more than 60 minutes	<input type="checkbox"/>	<input type="checkbox"/>

