



SCAN ME

# Cumulative Frequency Diagrams



SCAN ME

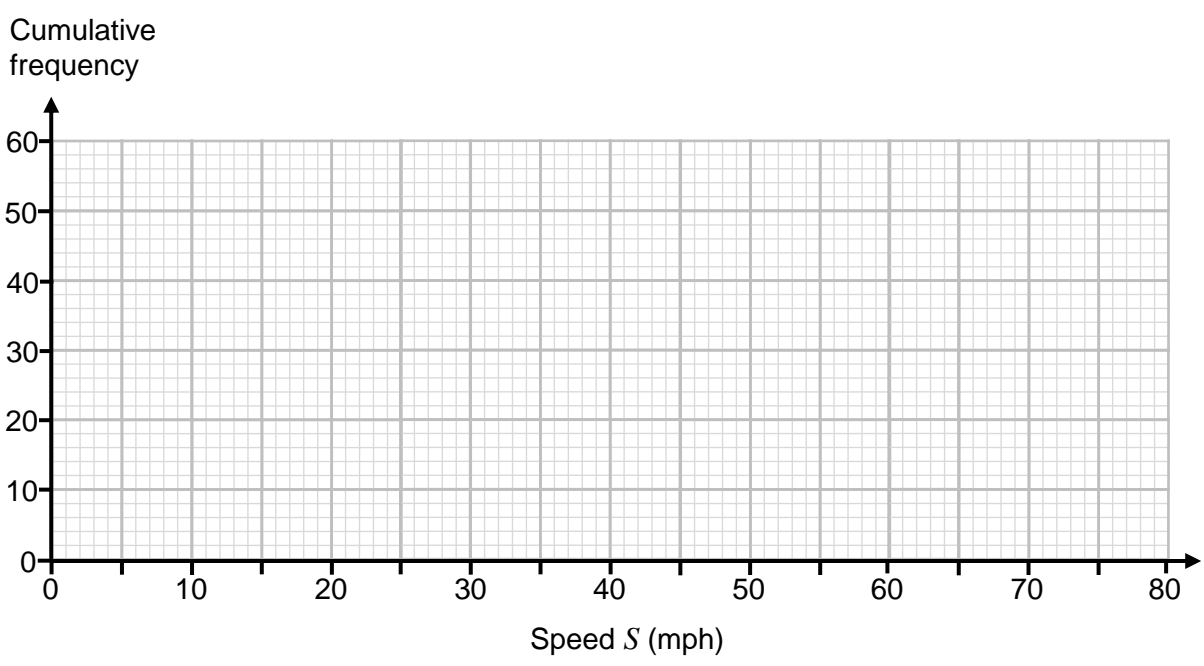
REVISE THIS TOPIC

CHECK YOUR ANSWERS

1 Here is some information about the speeds of 60 cars in miles per hour.

Speed, $S$	Frequency		
$0 < S \leq 20$	4		
$20 < S \leq 40$	13		
$40 < S \leq 60$	33		
$60 < S \leq 80$	10		

Draw a cumulative frequency graph. [3 marks]

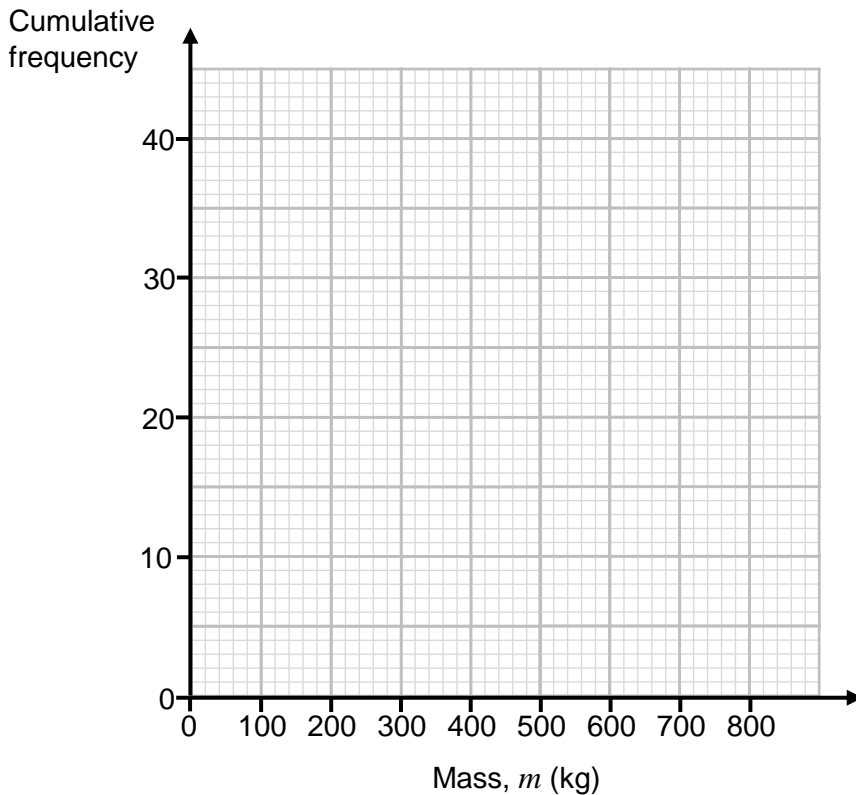


2 Here is some information about the masses, in kilograms, of 40 cows in a field.

Mass, $m$ , (kg)	Frequency		
$0 < m \leq 200$	6		
$200 < m \leq 400$	8		
$400 < m \leq 600$	15		
$600 < m \leq 800$	11		

2 (a) Draw a cumulative frequency graph.

[3 marks]





2 (b) Use your graph to estimate the median mass of the 40 cows. [1 mark]

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Answer \_\_\_\_\_ kg

2 (c) Use your graph to estimate the interquartile range of masses of the 40 cows. [2 marks]

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Answer \_\_\_\_\_ kg

2 (d) Cows that has a mass of less than 250 kg are considered small cows.  
Use your graph to find an estimate for the proportion of the cows in the field that are small cows. [2 marks]

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Answer \_\_\_\_\_

Turn over ►

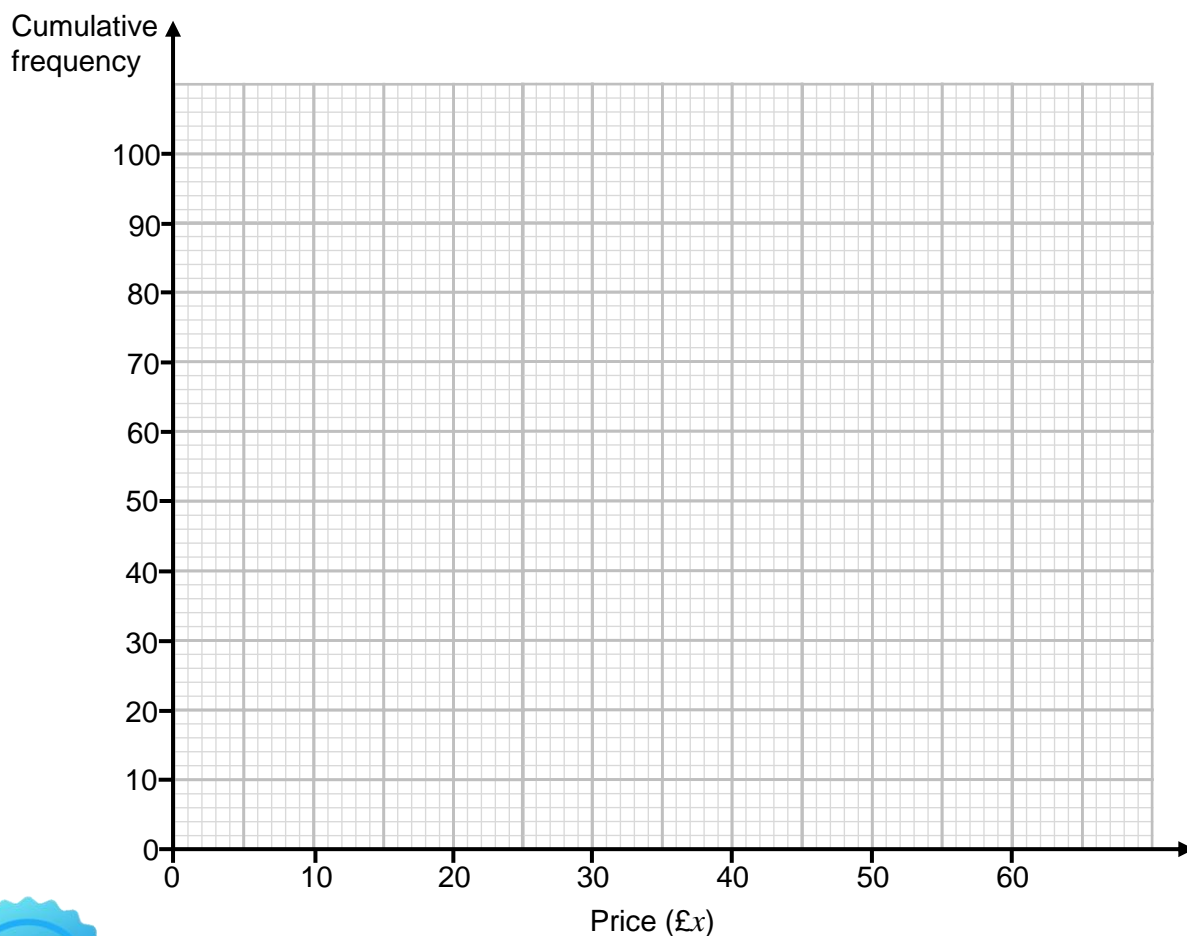


3 Here is some information about the price of 100 items in a shop.

Price (£ $x$ )	Frequency		
$0 \leq x < 10$	35		
$10 \leq x < 20$	20		
$20 \leq x < 30$	13		
$30 \leq x < 40$	12		
$40 \leq x < 50$	14		
$50 \leq x < 60$	6		

3 (a) Draw a cumulative frequency graph.

[3 marks]





3 (b) Use your graph to estimate the median price of the 100 items. [1 mark]

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Answer £ \_\_\_\_\_

3 (c) Use your graph to estimate the interquartile range of prices of the 100 items. [2 marks]

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Answer £ \_\_\_\_\_

3 (d) Chris has £23.00  
One of the items is selected at random.  
Use your graph to estimate the probability that Chris can afford to buy the item. [2 marks]

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Answer \_\_\_\_\_



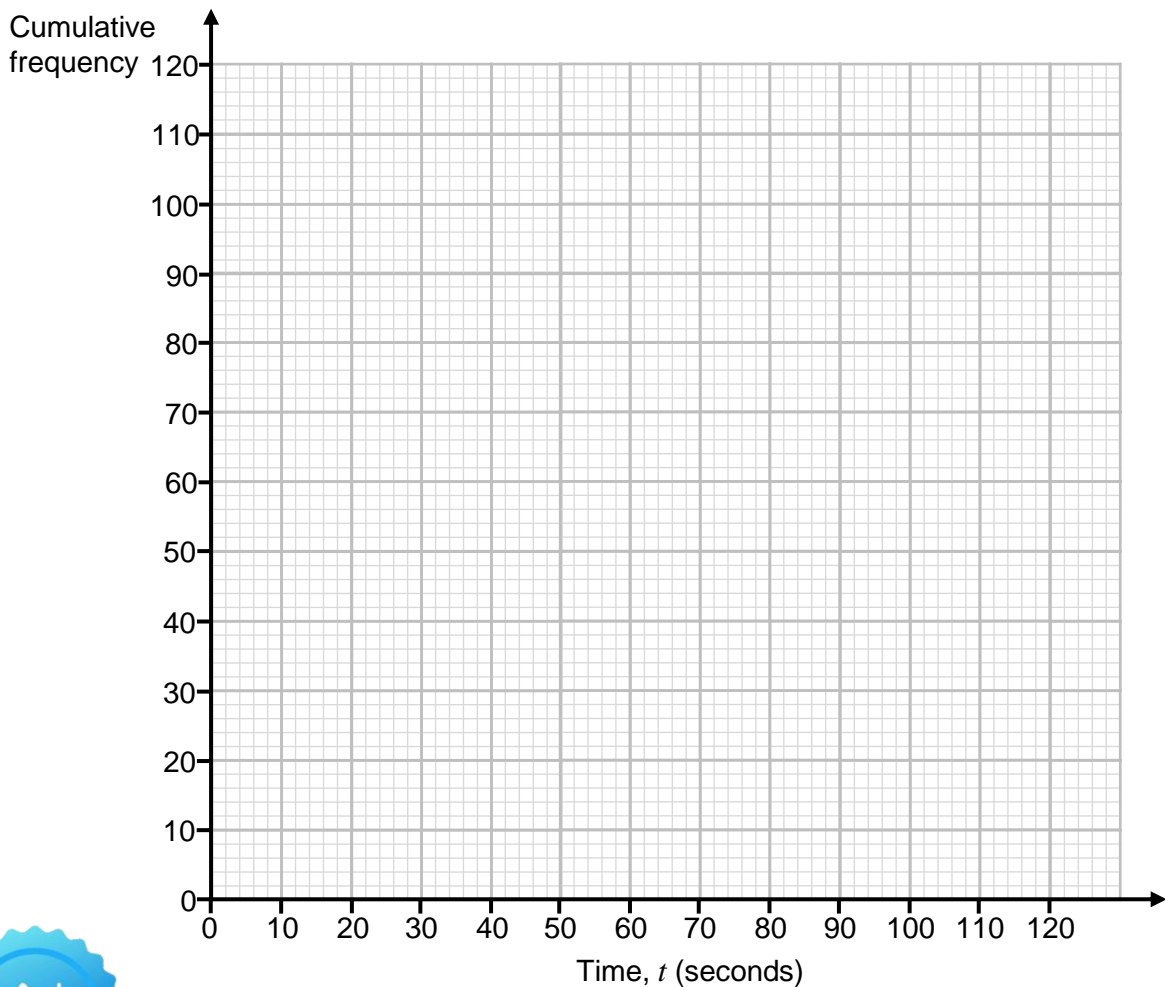
Turn over ►



- 4 Here is some information about the times taken for 120 people to solve a maths problem.

Time, $t$ , (seconds)	Frequency		
$0 < t \leq 20$	8		
$20 < t \leq 40$	24		
$40 < t \leq 60$	33		
$60 < t \leq 80$	30		
$80 < t \leq 100$	19		
$100 < t \leq 120$	6		

- 4 (a) Draw a cumulative frequency graph. [3 marks]





4 (b) Use your graph to estimate the median time taken by the 120 people. [1 mark]

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Answer \_\_\_\_\_ seconds

4 (c) Use your graph to estimate the interquartile range of times taken to solve the maths problem. [2 marks]

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Answer \_\_\_\_\_ seconds

4 (d) Everyone who solved the problem in less than 25 seconds wins a prize.  
Use your graph to find an estimate for the percentage of people that won a prize. [2 marks]

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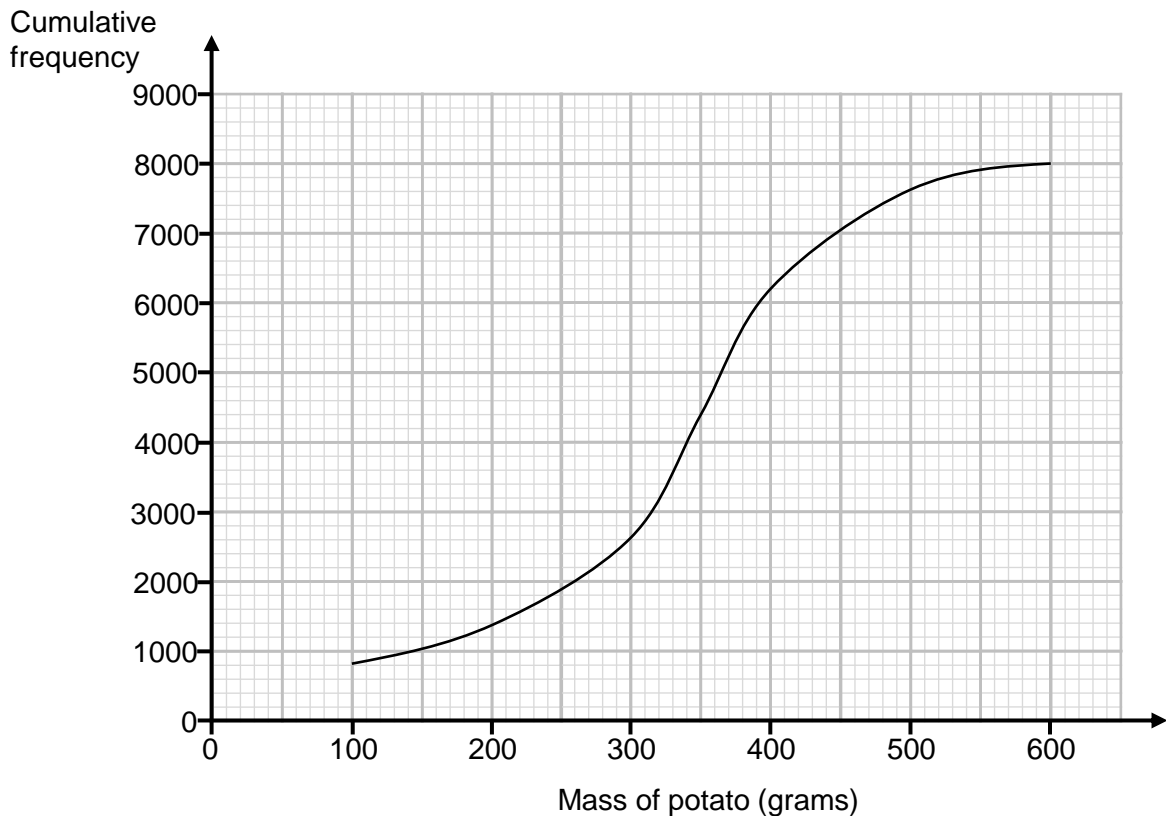
Answer \_\_\_\_\_ %



Turn over ►



- 5 The cumulative frequency diagram shows information about the masses, in grams, of the potatoes that a farmer harvests.



- 5 (a) Use your graph to estimate the median mass of the potatoes. [1 mark]

Answer \_\_\_\_\_ grams

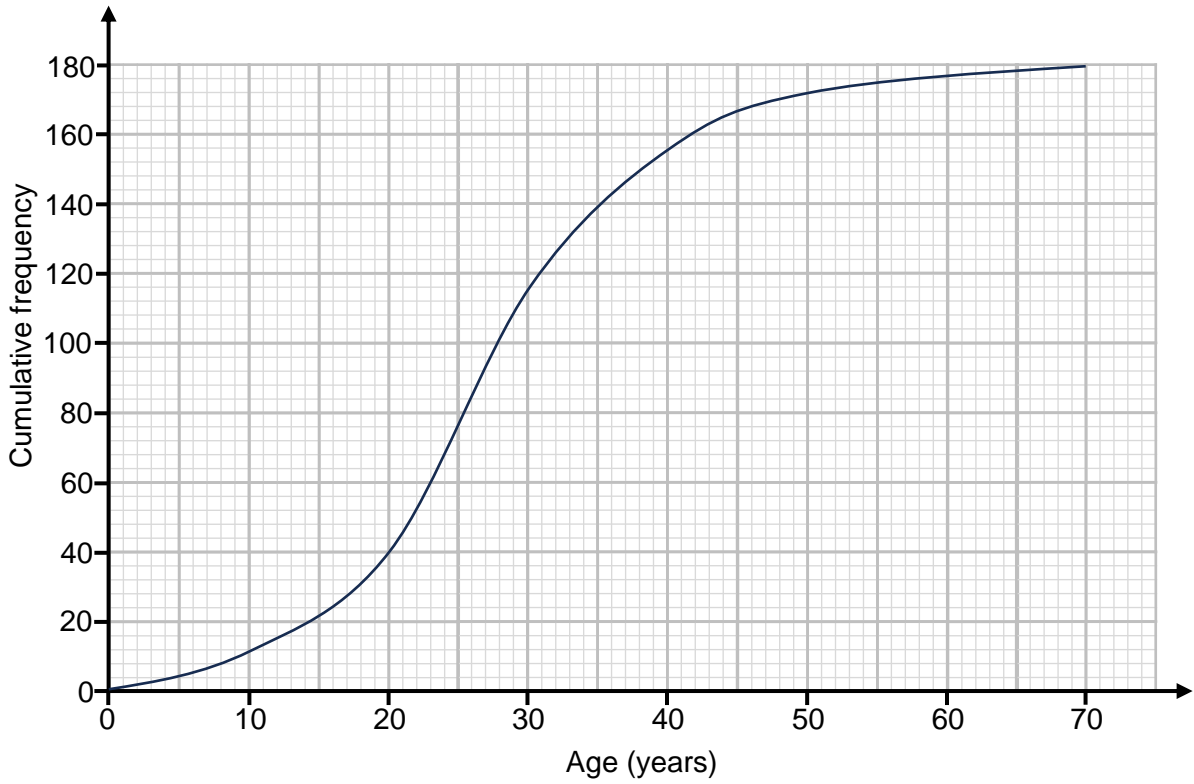
- 5 (b) The farmer can only sell potatoes that have a mass between 240g and 500g. Use your graph to work out an estimate for the number of potatoes from that harvest that the farmer can sell. [2 marks]

Answer \_\_\_\_\_ potatoes





- 6 The cumulative frequency diagram shows information about the ages, in years, of 180 people attending a cinema to watch a film.



The prices of different tickets are shown in the table below.

Child (18 years and under)	General Ticket	Senior (60 years and over)
£6.50	£9.50	£7.50

Use the graph to work out an estimate for the total amount of money the cinema receives in ticket sales for the showing of this film.

[4 marks]

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Answer £ \_\_\_\_\_

7
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Turn over ►



- 7 Peter throws the javelin 48 times and records the distances.  
Here is some information about the distances  $d$ , in metres of his 48 throws.

Distance, $d$ , (m)	$0 < d \leq 15$	$15 < d \leq 30$	$30 < d \leq 45$	$45 < d \leq 60$
Frequency	$a$	$b$	$c$	$d$

- 7 (a)  $a : b : c : d = 1 : 2 : 5 : 4$

Complete the cumulative frequency table.

[3 marks]

Distance, $d$ , (m)	$d \leq 15$	$d \leq 30$	$d \leq 45$	$d \leq 60$
Cumulative Frequency				

- 7 (b) Draw a cumulative frequency graph for this information.

[2 marks]

