

Exercise 2015- 12EP-00003(1)

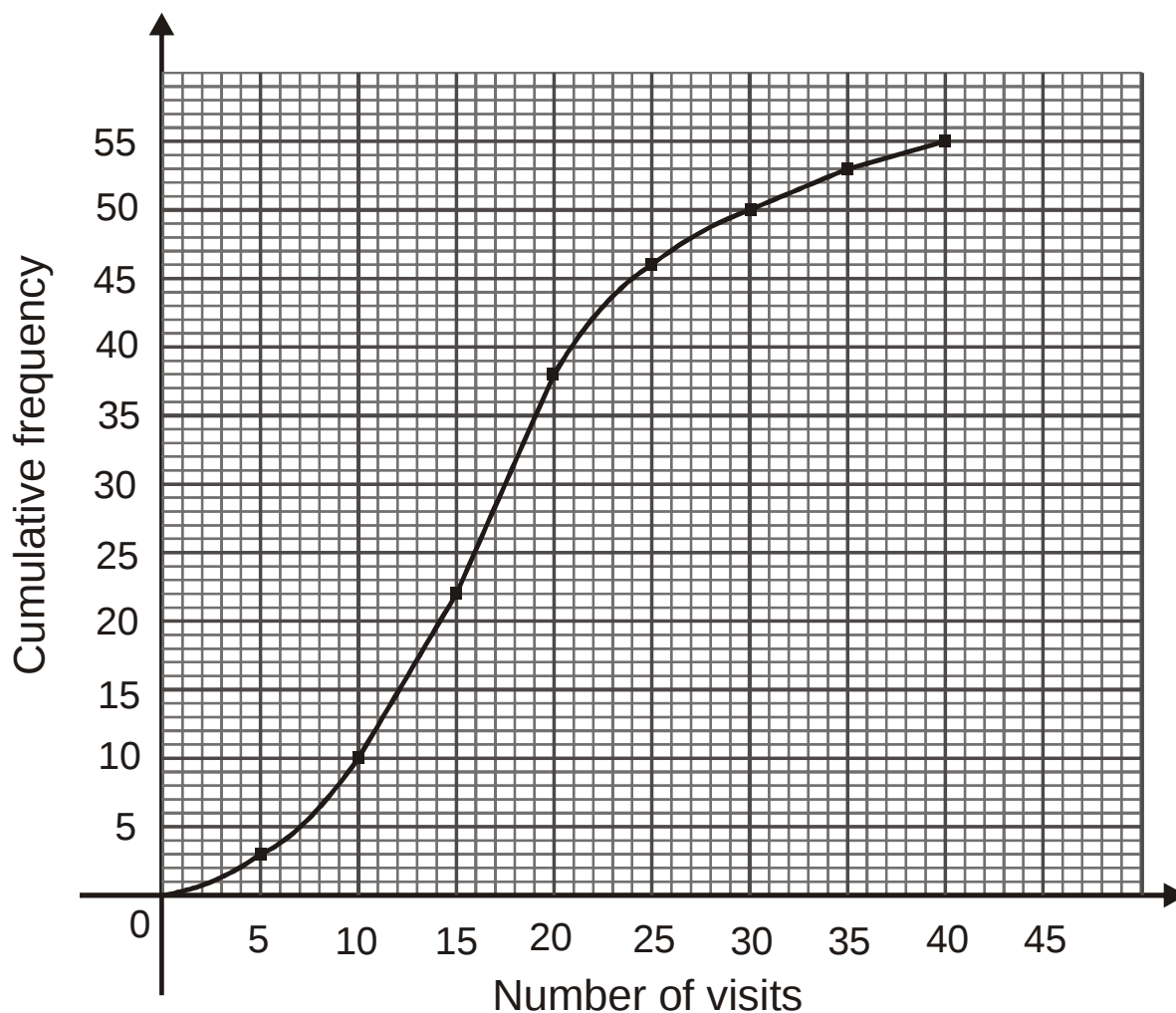
Statistics – Ogive

- (1) In a survey among 220 households, the amount (in rand) spent on domestic cleaning agents per month, is indicated as in the table:

Rand (x) spent on domestic cleaning agents	Frequency	Cumulative frequency	Points to plot
$0 < x \leq 100$	16		
$100 < x \leq 200$	20		
$200 < x \leq 300$	35		
$300 < x \leq 400$	44		
$400 < x \leq 500$	45		
$500 < x \leq 600$	22		
$600 < x \leq 700$	14		
$700 < x \leq 800$	10		
$800 < x \leq 900$	8		
$900 < x \leq 1\ 000$	6		

- (a) Complete the above table.
(b) Present the table in (a) as an ogive.
(c) Use the ogive in (b) and determine the median of the data. Use an M to indicate where the reading was made on the graph.

- (2) 55 members of a gymnasium are contacted to participate in a survey. The number of visits to the gymnasium over the last five months is presented on the following ogive. Study the graph and answer the following questions.



- (a) How many members have not maintained the minimum of at least two visits per month?
- (b) Calculate the median of all the visits.
- (c) Calculate the upper quartile.
- (d) What is the least number of visits that the upper 25% of the members, made to the gymnasium?
- (e) How many members visited the gymnasium 25 or more times over the last five months?
- (f) How many members visited the gymnasium in the interval $15 < x \leq 20$ over the five months?

(3) The maximum daily temperatures, measured for May, for a certain town is as follow:

23 31 28 27 25 27 18 17 17 15 20 22 23 22 25 23
26 30 32 36 27 25 23 26 21 17 19 21 26 30 30

(a) Complete the following table:

Daily temperatures (x) in °C	Tally	Frequency	Cumulative frequency
$12 < x \leq 15$			
$15 < x \leq 18$			
$18 < x \leq 21$			
$21 < x \leq 24$			
$24 < x \leq 27$			
$27 < x \leq 30$			
$30 < x \leq 33$			
$33 < x \leq 36$			

(b) Use the frequency table in (a) and draw an ogive of the data.

(c) Use the graph and determine Q_1 . Show on the graph where the reading where made.