Statistics

Mean $\bar{x}$: Average value

Standard deviation σ: The dispersion of the set of data

Variance σ^2

GDC skills

Casio

Menu → 2 Stat → put x in List 1 and put frequency in List 2 → F6 → F2 CAL → F1 1VAR

Check SET!!

For 1Var, frequency is 1	
1Var XList	List1
1Var Freq	**1**
2Var XList	List1
2Var YList	List2
2Var Freq	1

For 1Var, frequency is List 2	
1Var XList	List1
1Var Freq	**List2**
2Var XList	List1
2Var YList	List2
2Var Freq	1

TI 84

STAT → 1:Edit → put x in List 1 and put frequency in List 2 → STAT → CALC → 1–Var Test

T-nspire

1New document → 4: Add Lists & Spreedsheet → Name A as x and B as fre → Menu → 4: Statistics → 1: Stat Calculations → 1: One–Variable Statistics

Find the mean, standard deviation and variance of the following sets of data.

(a) 3, 4, 6, 5, 2, 1, 9, 2, 1, 9, 5, 6, 7, 2, 8

(b)

x	38	42	45	49	50	55	63	83	94
Frequency	4	5	2	1	9	12	8	5	4

Mode: The value that occurs most often

Lower quartile Q_1: The middle value of the lower half

Median Q_2: The middle value when the data set is ordered low to high. $\left(\frac{N+1}{2}\right)$

Upper quartile Q_3: The middle value of the upper half

Range: Max – Min

Interquartile range (IQR) = $Q_3 - Q_1$

The upper boundary = Q_3 +1.5 x IQR

The lower boundary = Q_1 – 1.5 x IQR

Find the mode, median, Q_1, Q_3, interquartile range and range of the following sets of data.

(a) 3, 5, 1, 2, 6, 7, 9, 3, 9, 4, 7, 8, 7

(b)

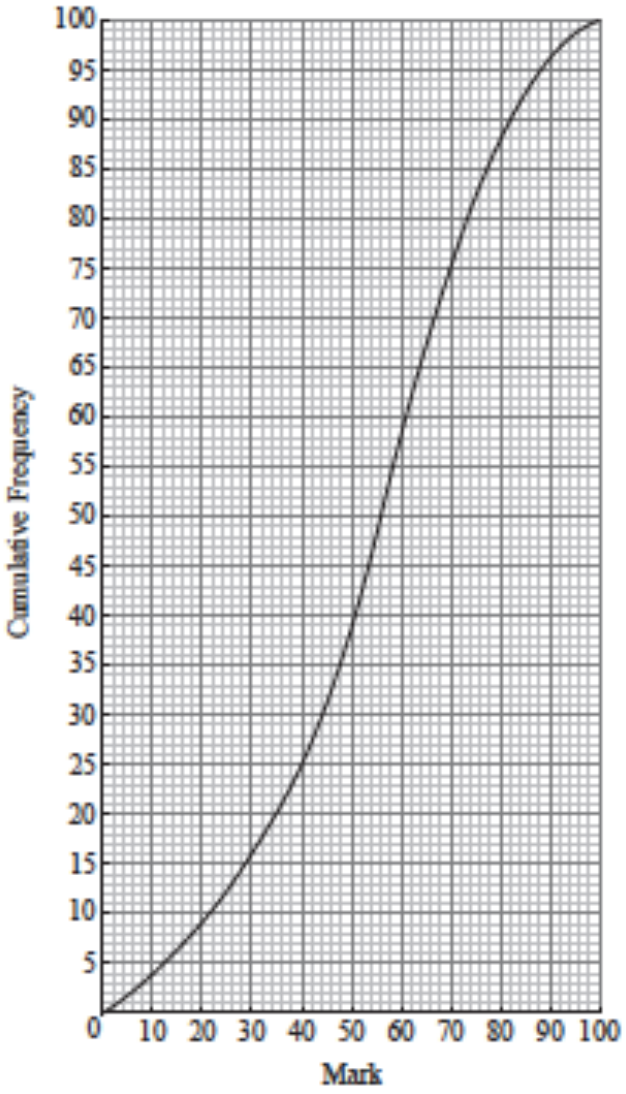
x	33	34	35	36	37	38	39
Frequency	1	5	7	13	12	8	1

(c) 21, 29, 53, 66, 21, 48, 62, 32, 12, 14, 74, 70

Exercise

Paper 1

1. The cumulative frequency curve below represents the marks obtained by 100 students.



(a) Find the median mark.

(b) Find the interquartile range.

2. The mean number of cans collected is 39.4. The standard deviation is 18.5.

Each student then collects 2 more cans.

(a) Write down the new mean.

(b) Write down the new standard deviation.