Cumulative Frequency Diagrams

We use cumulative frequency diagrams to consider the running totals of / people/ things up to a given value. They are useful for estimating the median and quartiles.

Example: The table below shows the time taken for a group of runners to run 50m. Draw a Cumulative Frequency curve for the data. Use your graph to estimate the median, LQ, UQ and IQR.

Median =

LQ =

UQ =

IQR =

|  |  |  |
| --- | --- | --- |
| **Time (s)** | **Frequency** | **C. Freq** |
| 9.6 < t ≤ 9.7 | 1 | 1 |
| 9.7 < t ≤ 9.9 | 4 | 5 |
| 9.9 < t ≤ 10.05 | 10 | 15 |
| 10.05 < t ≤ 10.2 | 17 | 32 |



Estimate how many runners had a time less than 10.15s.

Estimate how many runners had a time more than 9.95

Estimate how many runners had a time between 9.8s and 10s

Ex 3C Pg 47/48