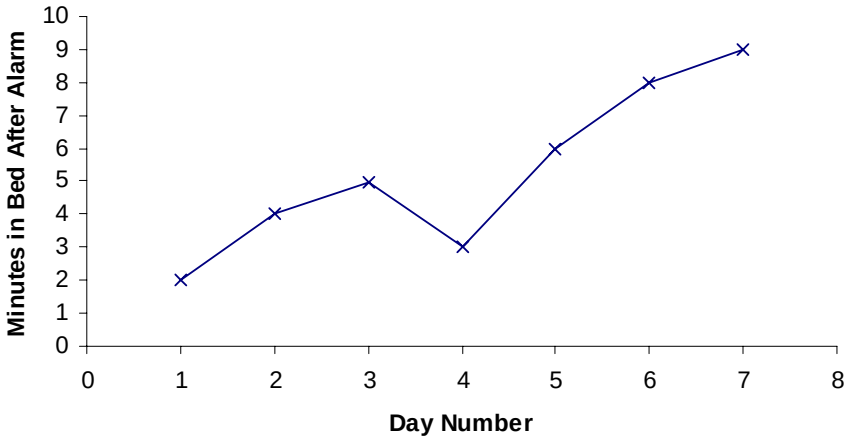
# More Statistics

## Line Graphs

- Used a lot to show how something is changing over time, and can even be used to predict the future (carefully).
- Can also show *trends*. A trend is the general direction in which something is heading or tending towards. For instance, the population of the world has a trend – it is *increasing*.
- Usually have two axes - horizontal axis which shows categories or time, vertical axis which usually shows a quantity.
- *Adjacent* (next to each other) categories on the horizontal axis have to be somehow linked to each other.
- This table shows some data about how long a student Jason has stayed in bed after his alarm has gone off over the course of a week.

| **Day** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| **Minutes in bed after alarm** | 2 | 4 | 5 | 3 | 6 | 8 | 9 |

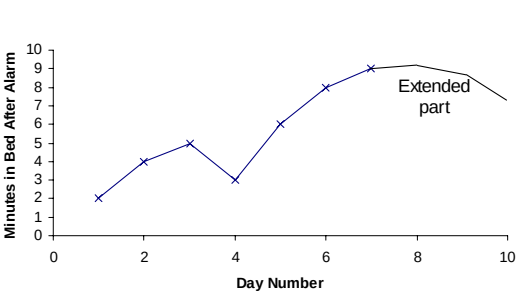


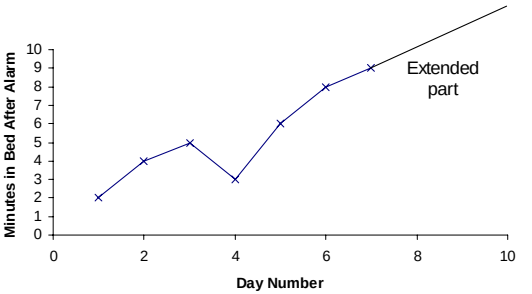

## Trends

- Trends are overall characteristics of which 'way' the data is heading – for instance whether the quantities are *in general* increasing or decreasing.

## Extrapolating

- Extrapolation is used to try and predict data outside of the data you're given.
- Extrapolating a line graph is what happens when you *extend* the line graph in either direction, to the left or to the right.
- Which way you pick to extend the line when you extrapolate isn't as important as *justifying* why you extended it in that way.




1st graph: Based on the trend from days 4 to 7, which indicates that Jason's stay in bed time is increasing, but increasing by a smaller amount each day, the line was extended in this way.

2nd graph: Based on the overall trend in the graph, which is an increasing trend, the line was extended in an increasing manner corresponding with the average increase of the existing line.

## Pictographs

- Pictographs use pictures to represent information.
- Each stick figure represents ten school students
- Half a stick figure represents five students
- Pictographs can reduce accuracy, but are often more visually attractive
- Reinforce what the data is about – in this case the number of students (hence stick figures)