**M9**

# Drawing Line Graphs

When drawing a line graph remember to:

1. Give graph a useful title.

2. Use the horizontal axis for the independent variable – label the axis and add units if appropriate.

3. Scale the axis so all values can fit on the axis while utilizing most of the space available. Label some values on the scale in such a way that a reader understands what one horizontal unit stands for.

4. Use the vertical axis for the dependent variable – label the axis and add units if appropriate.

5. Scale the axis so all values can fit on the axis while utilizing most of the space available. Label some values on the scale in such a way that a reader understands what one vertical unit stands for.

6. Plot the points.

7. **If the independent variable represents continuous numerical data, connect points with line segments**.

8. If the independent variable represents <u>categorical data or discrete numerical</u> data, **<u>do not connect points</u>** with line segments.

Example 1: Determine whether a variable is dependent (D) or independent (I)

| Cost of renting a car. | | Average daily temperature. | | Math test results. | |
|---|---|---|---|---|---|
| Number of kilometers driven in a rented car. | | Amount of ice-cream sold. | | Number of hours spent on doing homework. | |

| Number of swans on the lake. | | Time during the day. | | Number of hours of night rest. | |
|---|---|---|---|---|---|
| Date in April and in May. | | Number of passengers on a city bus. | | Number of hours spent gaming. | |

Example 2:
Given a table of values, graph the information using a line graph.

| Average mass in kg | Number of swans |
|---|---|
| 7.5 | 4 |
| 8.0 | 6 |
| 8.5 | 5 |
| 9.0 | 12 |
| 9.5 | 9 |
| 10.0 | 10 |
| 10.5 | 10 |
| 11.0 | 15 |
| 11.5 | 12 |
| 12.0 | 8 |
| 12.5 | 4 |