1. **Constructing a pie chart**

|  |  |
| --- | --- |
| **Number of children** | **Frequency** |
| 0 | 4 |
| 1 | 7 |
| 2 | 12 |
| 3 | 9 |
| 4 | 5 |
| 5 or more | 2 |

The table shows the results of a survey about families. Copy the data into a spreadsheet.

Select the complete table and choose Insert > Pie. Choose an appropriate 2D pie chart to represent the data.

Make sure that your pie chart has a title, and that the labels are correct.

Copy your pie chart into a MS Word document.

Explain why a 3D pie chart is misleading.

1. **Constructing a bar chart**

|  |  |
| --- | --- |
| **House type** | **Frequency** |
| Caravan | 1 |
| Flat | 3 |
| Bungalow | 2 |
| Terrace | 7 |
| Semi-detached | 15 |
| Detached | 8 |

The table shows more results from the survey. Copy this data into a spreadsheet.

MS Excel creates bar charts horizontally. Select the complete table and choose Insert > Column. Choose an appropriate 2D column chart to represent the data.

Make sure that your bar chart has a title, and that the labels are correct.

Copy your bar chart into the same Word document.

Give three reasons why this bar chart is not good.

1. **Constructing a time series graph**

The table here shows information from a weather forecast. Copy this data into a spreadsheet.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Time** | 18:00 | 21:00 | 00:00 | 03:00 | 06:00 | 09:00 | 12:00 | 15:00 | 18:00 | 21:00 |
| **Wind speed (mph)** | 13 | 12 | 11 | 10 | 11 | 16 | 15 | 15 | 12 | 9 |

Select the complete table and choose Insert > Line. Choose an appropriate line graph to represent the data.

Make sure that your graph has a title, and that the labels are correct.

Copy your time series graph into your Word document.

Excel automatically creates a key (or legend) for these graphs. Do you think this is necessary? Explain your answer.

1. **Constructing a scatter diagram**

|  |  |
| --- | --- |
| **Height above sea level (m)** | **Temperature (°C)** |
| 110 | 15.1 |
| 280 | 12.9 |
| 450 | 12 |
| 630 | 11 |
| 800 | 9.8 |
| 1000 | 8.8 |
| 1200 | 7.5 |
| 1400 | 5.8 |
| 1550 | 3.7 |
| 1750 | 3.2 |
| 1950 | 2.3 |
| 2150 | 1 |

The table shows temperature data measured in 12 locations in the USA. Copy this data into a spreadsheet.

Select the complete table and choose Insert > Scatter. Choose an appropriate scatter graph to represent the data.

Make sure that your scatter graph has a title, and that the labels are correct.

Select the points by clicking on any one of them. Right click and choose ‘Add Trendline’. This will add a line of best fit to your diagram.

Copy your scatter graph into your Word document.

Describe the correlation shown in the diagram. What does this tell you about temperature in mountainous areas?