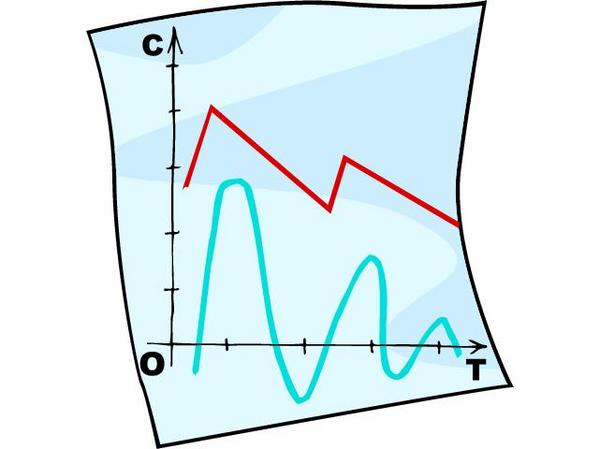
VCE INFORMATION TECHNOLOGY

UNIT 1 OUTCOME 1



DATA TO INFORMATION

REVISION NOTES

**Outcome 1**

Select data from data sets, design solutions and use a range of spreadsheet functions to develop solutions that meet specific purposes.

**Key Knowledge**

**1.** Stages of the **problem-solving methodology**

**2. Purposes for creating solutions**, for example to inform, to entertain, to educate, to persuade

**3. Data types**, including integer, floating point numbers, character, string

**4.** Techniques for identifying **relevant data**

**5.** Purpose and functions of **graphic representations**

**6.** Applications and capabilities of **spreadsheet software**

**7. Design elements** that influence the appearance and effectiveness of graphic representations

**8. Design tools** for representing the functionality and appearance of solutions, including graphic representations

**9. Spreadsheet software** functions and techniques for efficiently and effectively manipulating and validating data

**10. Formats and conventions** applied to solutions in order to improve their effectiveness in meeting specific purposes

**11.** Techniques for **testing solutions**

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| **1. Stages of the problem solving methodology** |

**Required**

**1. Draw** the Problem-Solving Methodology diagram

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**2. Explain** the purpose of the Problem-Solving Methodology

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**3. Discuss** why the ‘Design’ stage occurs before the ‘Development’ stage

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| **2. Purposes for creating solutions for example to inform, to entertain, to educate, to persuade** |

**Required:**

**1.** For each of the following information products, **state** whether the main purpose is to:

1. Entertain

2. Inform

3. Educate

4. Persuade

|  |  |
| --- | --- |
| **Information Product** | **Purpose** |
| Social Network Movie |  |
| Online Textbook |  |
| Mobile Phone Bill |  |
| Trailer for the Social Network |  |
| World of Warcraft game |  |
| TV commercial for a new show |  |
| The Age Website |  |
| Driving Simulator |  |
| Vodafone Web Banner Advertisement |  |
| Online Newsletter |  |
| Angry Birds |  |
| IT Revision Notes Document |  |

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| **3. Data types including integer, floating point numbers, character & string** |

**Required:  
  
1. Define** the term ‘Data Type’. **Give** an exampleto support your answer

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**2. Explain** what is meant by the term ‘Floating Point Number”

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**3.** For each of the following **state** the data type

|  |  |
| --- | --- |
| **Data** | **Data Type** |
| Nine |  |
| 0.3456 |  |
| 56 |  |
| Y |  |
| Y/N |  |
| YTU 789 |  |
| $4.95 |  |
| Address |  |

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| **4. Techniques for identifying relevant data** |

**Required:**

For data to be relevant it must be useable

**1. List** the five elements that data requires to be considered useable

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**2.** For each scenario listed below **identify** the useable characteristic missing

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| --- | --- |
| **Scenario** | **Characteristic** |
| The data downloaded was in a format not compatible with the current data |  |
| The column chart was create in a spreadsheet solution where no validation was used |  |
| Peter quoted is his essay economic data from 15 years ago |  |
| The online review of running shoes was written by a sports manufacture |  |
| The data was sourced from a website that nobody had ever heard of before |  |

**3. Describe** how a design of a spreadsheet may be affected if the audience were mainly elderly people

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| **5. Purpose and functions of graphic representations** |

**Required:**

**1. Discuss** two reasons why data should be presented in a graphical format

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**2.** For each of the following types of graphs **explain** when they would be most appropriate

|  |  |
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| **Graph** | **Appropriate** |
| Column |  |
| Line |  |
| Pie |  |
| Bar |  |
| Area |  |
| Scatter |  |

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| **6. Applications and capabilities of spreadsheet software** |

**Required**

**1. Define** the term “Spreadsheet”

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**2. List** five applications of Spreadsheets

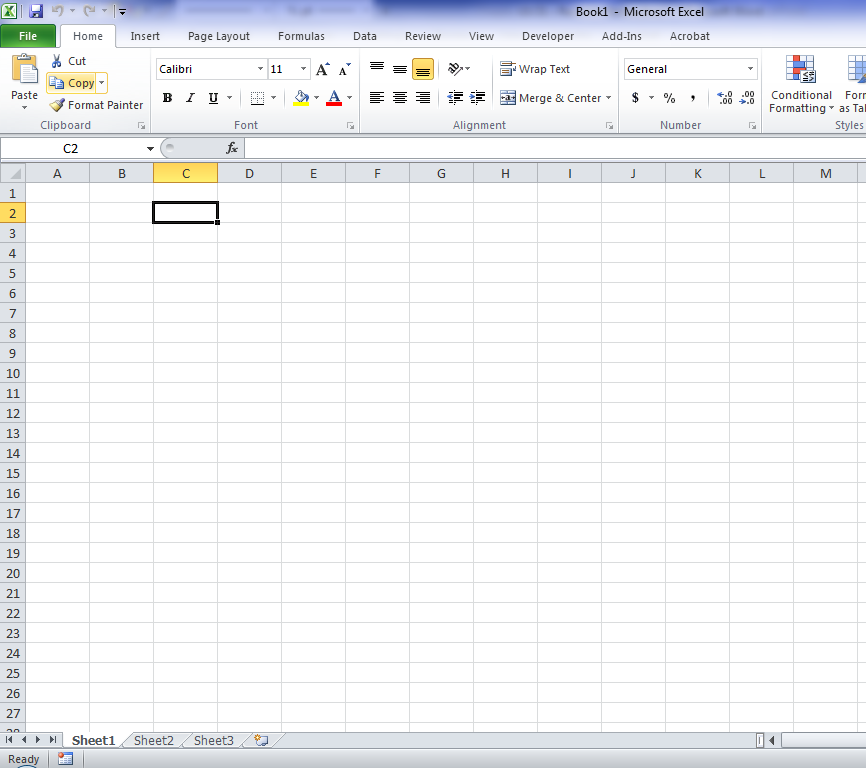
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**3. Label** the following on the spreadsheet below

Cell Formula Bar Worksheet Active Cell

Column Row Function Wizard Conditional Formatting



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| **7. Design elements that influence the appearance and effectiveness of graphic representations** |

**Required**

**1. Explain** why it is important to incorporate design elements into a solution

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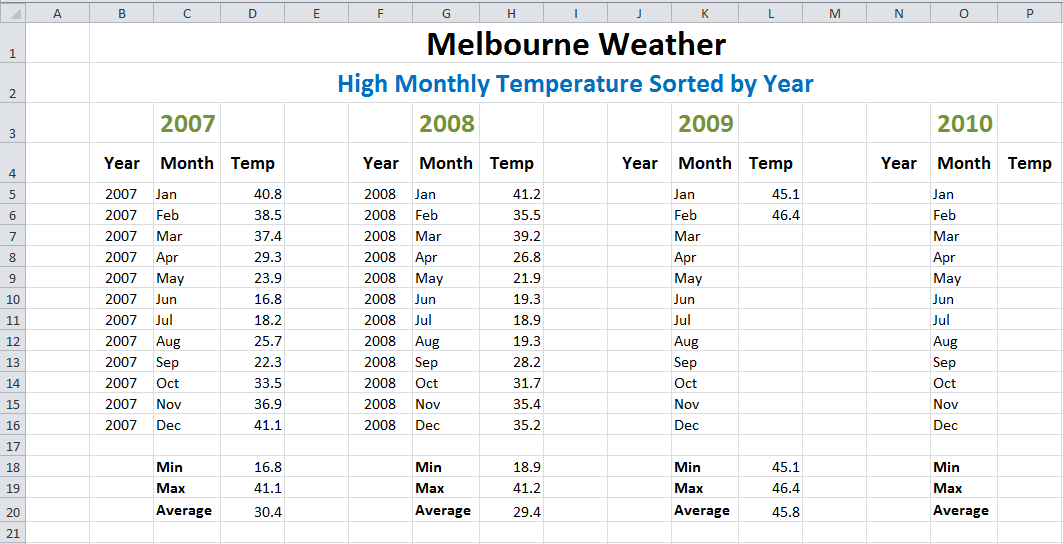
**2. List** seven design elements

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**3. Describe** how two design elements have been used in the spreadsheet shown



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| **8. Design tools for representing the functionality and appearance of solutions**  **including graphic representations** |

**Required:**

**1.** Discuss advantages of completing the ‘Design’ stage

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**2. Explain** the purpose of a layout diagram

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Melbourne Car Sales wish to create a graph showing the trend in the number of cars sold over the last 12 months

**3. Create** an annotated layout diagram showing an appropriate solution

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| **9. Spreadsheet software functions and techniques for efficiently and effectively manipulating and validating data** |

**Required:**  
**1. Explain** how a function is different to a formula

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**2. Explain** how a workbook is different to a worksheet

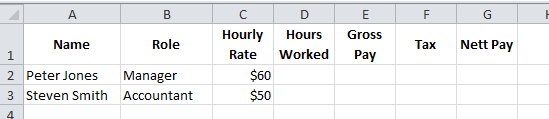
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A user is about to re-use the spreadsheet shown below

**3. Discuss** how the spreadsheet will help the user in terms of effectiveness and efficiency



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| **10. Formats and conventions applied to solutions in order to improve their effectiveness in meeting specific purposes** |

**Required:**  
**1. Define** the term ‘format’

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**2. Define** the term ‘convention’

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**3.** From the spreadsheet below **identify** two formats and two conventions used



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| **11. Techniques for testing solutions** |

**Required:**  
**1. Explain** the purpose of testing

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**2. List** the ten attributes of effective output

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3. For each scenario **identify** the missing attribute

|  |  |
| --- | --- |
| **Scenario** | **Attribute** |
| The spreadsheet is missing data for 2012 |  |
| The information was based on data that came from a unknown source |  |
| The formula to calculate the total cost of the air ticket was incorrect |  |
| The workbook opens on the wrong worksheet |  |
| The user cannot understand the validation used |  |
| The graph produced is hard to understand |  |
| It takes four weeks to process the data into information |  |