

FÓRMULAS E FUNÇÕES EM

MICROSOFT

EXCEL

M. A. FACAS VICENTE

UNIVERSIDADE DE COIMBRA

2019

MÓDULO I



UNIVERSIDADE D  
COIMBRA



# Objectivos

- Os objectivos da acção de formação são
  - ▣ a aquisição de capacidades de nível médio na introdução, processamento e apresentação de dados através do *Microsoft Excel*
- As potencialidades da folha de cálculo são exploradas a partir de problemas colocados e resolvidos nas sessões



# Bibliografia

- J.J. Dias Curto (2001). Excel para Economia e Gestão. Edições Sílabo.
- A. Martins (2004). Excel Aplicado à Gestão. Edições Sílabo.
- Curtis D. Frye (2007). Microsoft® Office Excel ® 2007 Step by Step. Microsoft Press.
- Greg Harvey (2007). Excel 2007 for Dummies, Wiley Publishing, Inc..

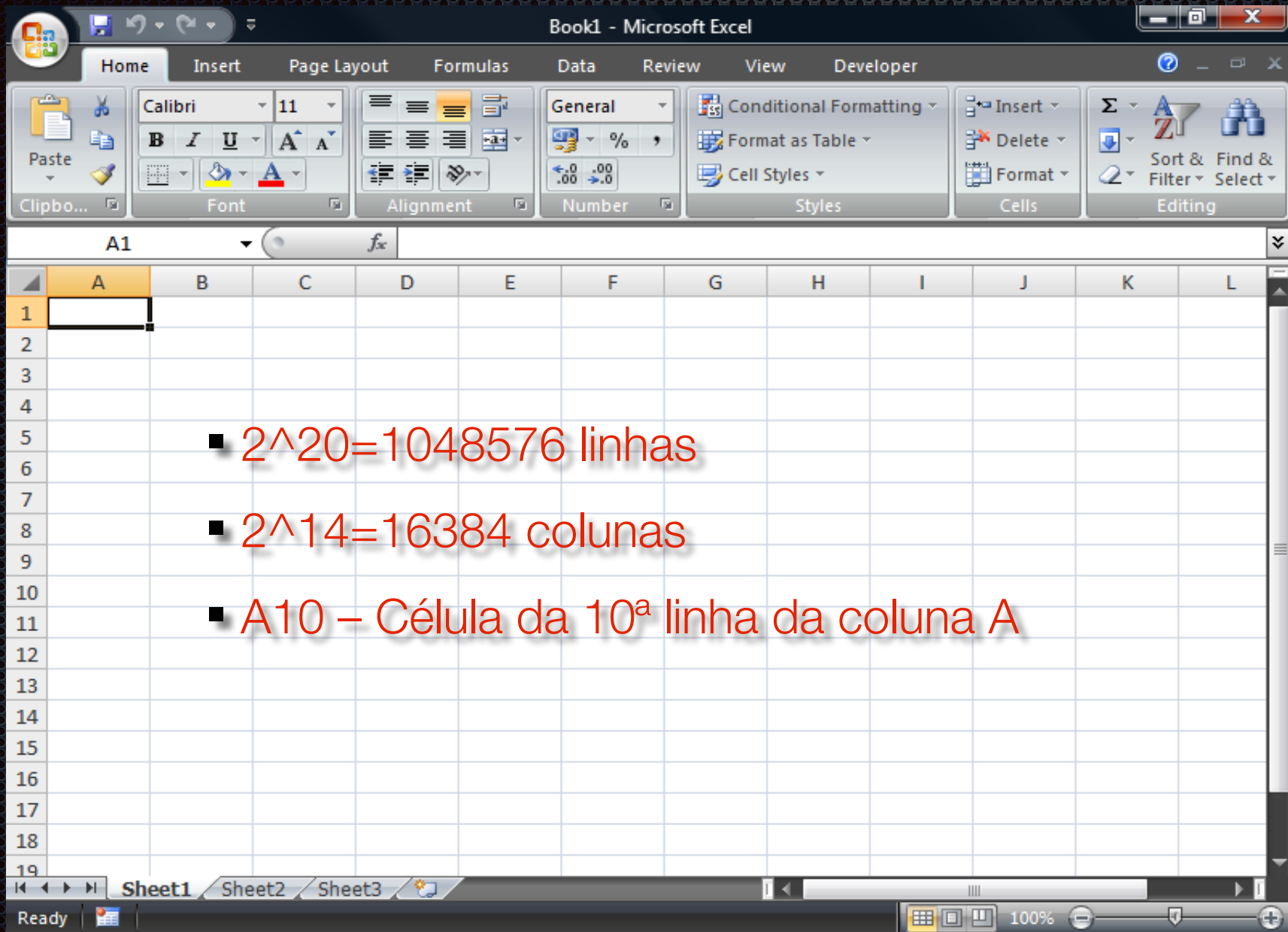


# Contacto por e-mail

- E-mail: [vicente@mat.uc.pt](mailto:vicente@mat.uc.pt)
- Webpage: <http://www.mat.uc.pt/~vicente/excel/>



# Folha de cálculo Excel

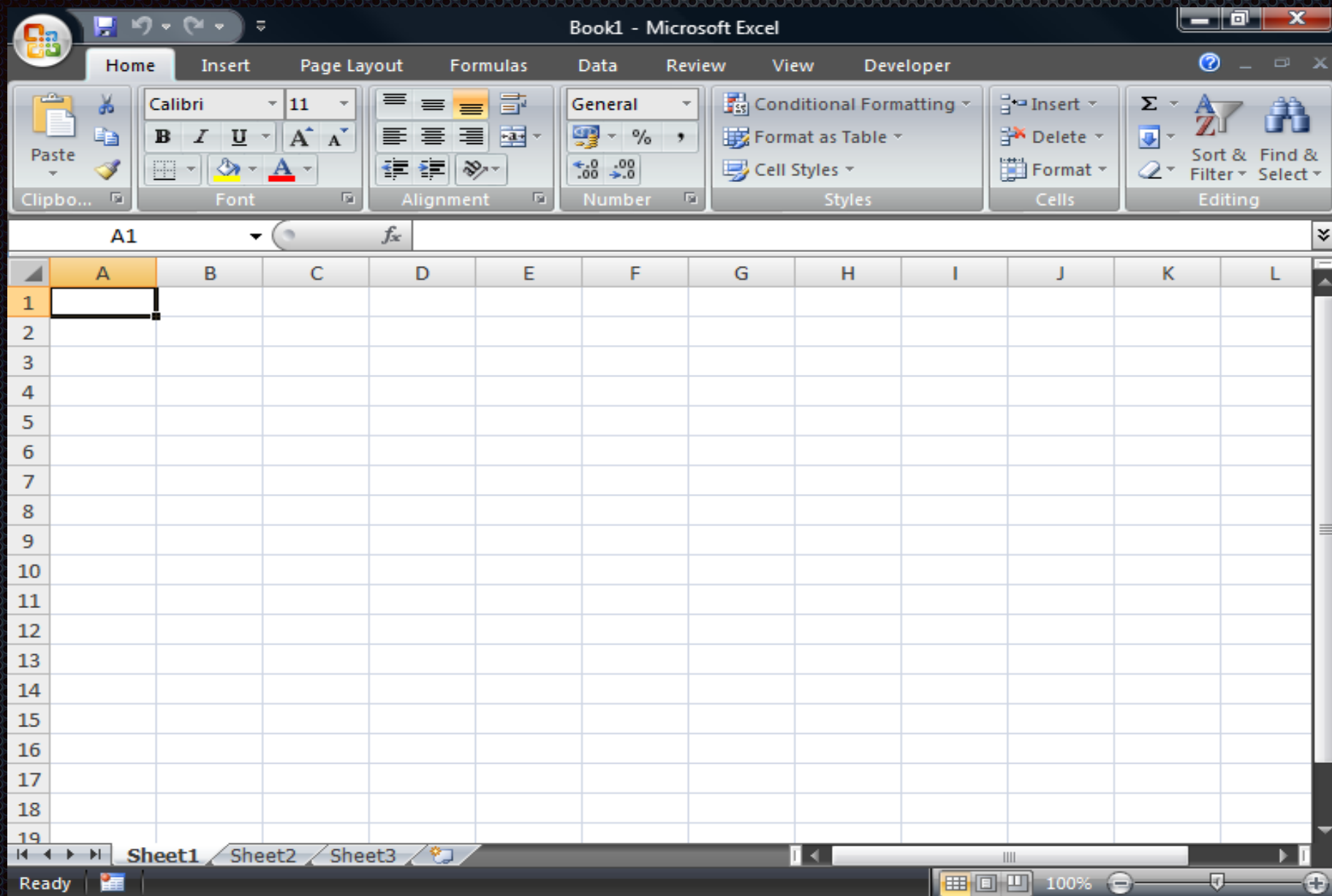


The image shows a screenshot of the Microsoft Excel application window. The title bar reads "Book1 - Microsoft Excel". The ribbon is set to "Home", and the "Font" group is active, showing "Calibri" font and size "11". The worksheet grid is visible, with column headers A through L and row numbers 1 through 19. A list of three mathematical facts is overlaid on the grid in red text:

- $2^{20} = 1048576$  linhas
- $2^{14} = 16384$  colunas
- A10 – Célula da 10ª linha da coluna A

The status bar at the bottom shows "Ready", "Sheet1", "Sheet2", "Sheet3", and "100%" zoom level.

# Menus e ferramentas associadas





# Deslocações na folha de cálculo

- Deslocações para a célula acima, abaixo, à direita e à esquerda da célula activa:

**utilizar as setas do teclado**

- Deslocações para os extremos da folha de cálculo:

**<Ctrl>+seta**



# Inserção de dados

- Activar a célula onde se pretende inserir os dados
- Inserir os dados na célula
- Concluir a inserção pressionando

**<Enter>**

ou uma das setas do teclado



# Exercício 1.1

- Insira os valores seguintes na sua folha Excel:

The screenshot shows the Microsoft Excel interface with the following data in the spreadsheet:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Consumos de electricidade em Coimbra (em Kwh/1000000)											
2	Anos	domésticos	industriais									
3	2000	180	338									
4	2001	185	323									
5	2002	191	209									
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												

The cell at the intersection of column E and row 13 is highlighted with a black border, indicating it is the active cell for data entry.

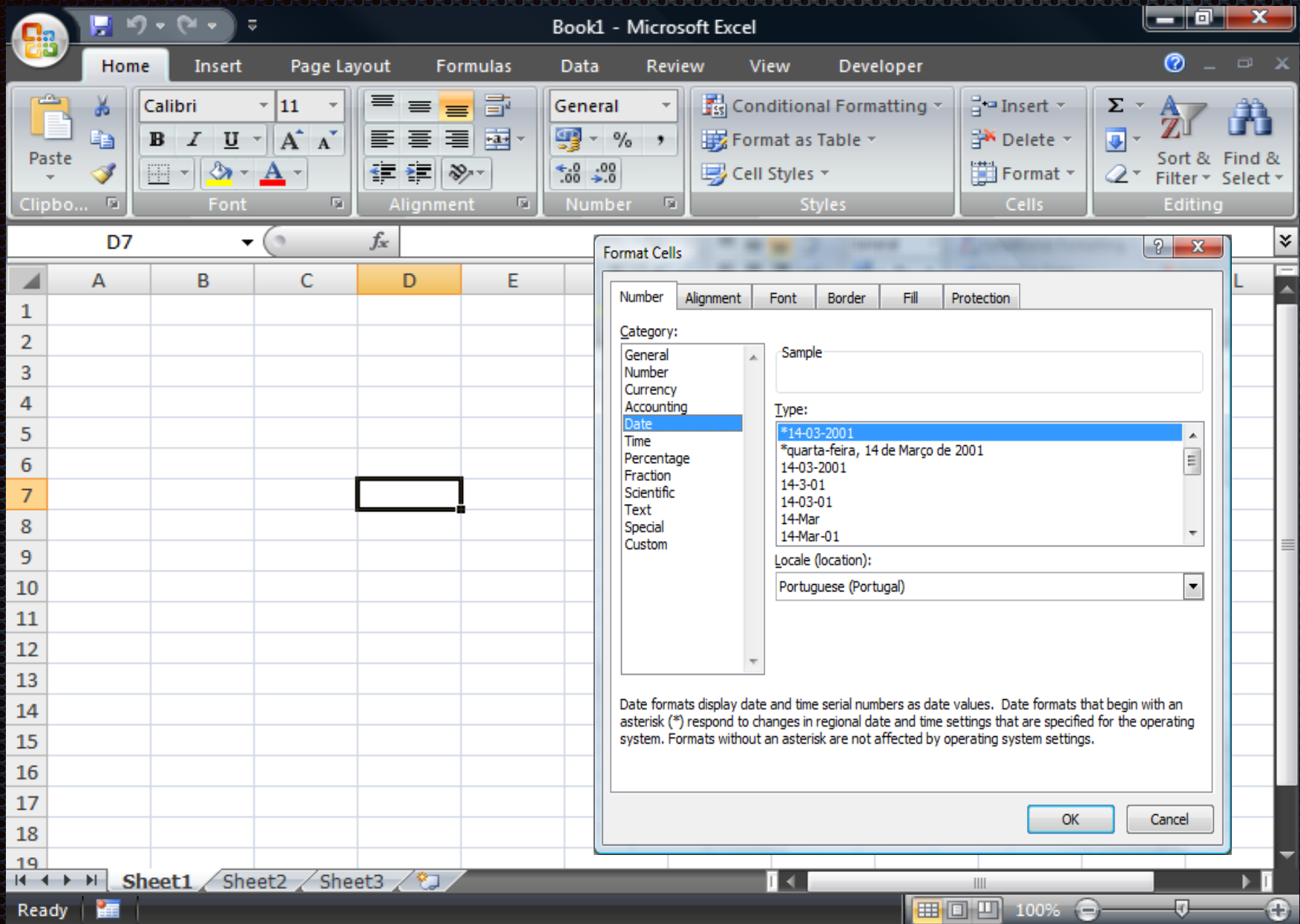


# Formatar célula

The image shows the Microsoft Excel interface with the 'Format' menu open over cell A1. The ribbon includes 'Home', 'Insert', 'Page Layout', 'Formulas', 'Data', 'Review', 'View', and 'Developer'. The 'Format' menu is expanded, showing options for 'Cell Size', 'Visibility', 'Organize Sheets', and 'Protection'. The 'Cell Size' section includes 'Row Height...', 'AutoFit Row Height', 'Column Width...', 'AutoFit Column Width', and 'Default Width...'. The 'Visibility' section includes 'Hide & Unhide'. The 'Organize Sheets' section includes 'Rename Sheet', 'Move or Copy Sheet...', and 'Tab Color'. The 'Protection' section includes 'Protect Sheet...', 'Lock Cell', and 'Format Cells...'. The status bar at the bottom shows 'Ready', 'Sheet1', 'Sheet2', 'Sheet3', and '100%'.



# Formatar célula e outras formatações



The image shows the Microsoft Excel interface with the 'Format Cells' dialog box open. The dialog box is titled 'Format Cells' and has several tabs: Number, Alignment, Font, Border, Fill, and Protection. The 'Number' tab is selected. In the 'Number' tab, the 'Category' list on the left has 'Date' selected. The 'Type' list on the right shows several date formats, with '\*14-03-2001' selected. The 'Locale (location)' dropdown is set to 'Portuguese (Portugal)'. The background shows the Excel ribbon with the 'Home' tab active, and the 'Number' group in the ribbon is visible. The spreadsheet grid shows cell D7 selected.

Book1 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer

Paste Calibri 11 Font Alignment Number Conditional Formatting Styles Cells Editing

Format Cells

Number Alignment Font Border Fill Protection

Category:

- General
- Number
- Currency
- Accounting
- Date**
- Time
- Percentage
- Fraction
- Scientific
- Text
- Special
- Custom

Sample

Type:

- \*14-03-2001**
- \*quarta-feira, 14 de Março de 2001
- 14-03-2001
- 14-3-01
- 14-03-01
- 14-Mar
- 14-Mar-01

Locale (location): Portuguese (Portugal)

Date formats display date and time serial numbers as date values. Date formats that begin with an asterisk (\*) respond to changes in regional date and time settings that are specified for the operating system. Formats without an asterisk are not affected by operating system settings.

OK Cancel

Sheet1 Sheet2 Sheet3

Ready 100%



# Exercício 1.1 (cont.)

- Utilizar as formatações anteriores para obter

The screenshot shows the Microsoft Excel interface with the following data table:

Consumos de electricidade em Coimbra (em Kwh/1000000)			
Anos	domésticos	industriais	
2000	180	338	
2001	185	323	
2002	191	209	

The spreadsheet is titled "exercicio11.xlsx" and is open in Microsoft Excel. The active cell is E7, which is currently empty and has a black border. The ribbon shows the Home tab with various formatting options like Font, Alignment, Number, Styles, Cells, and Editing. The status bar at the bottom indicates "Ready" and "100%".



# Exercício 1.2

- Inserir na célula B2 a data de hoje

DD-MM-AAAA

- Apagar o data usando a tecla **<Del>** e inserir um número
- Explicar o sucedido



# Exercício 1.3

- Utilizar o ficheiro

vendedores.xlsx

- A partir da folha I, obter as folhas II e III a seguir apresentadas



# Exercício 1.3

## Folha II

TPC1i.xls [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer

Paste Font Alignment Number Styles Cells Editing

C3 fx 120

	A	B	C	D	E	F	G	H	I	J	K	L
1	Quadro de vendas											
2	Data	Vendedor	Valor									
3	01-02-2005	António	120,00 €									
4	01-02-2005	José	240,00 €									
5	03-02-2005	António	300,00 €									
6	05-02-2005	Joana	100,00 €									
7	06-02-2005	Joana	300,00 €									
8	10-02-2005	José	140,00 €									
9	15-02-2005	António	135,00 €									
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												

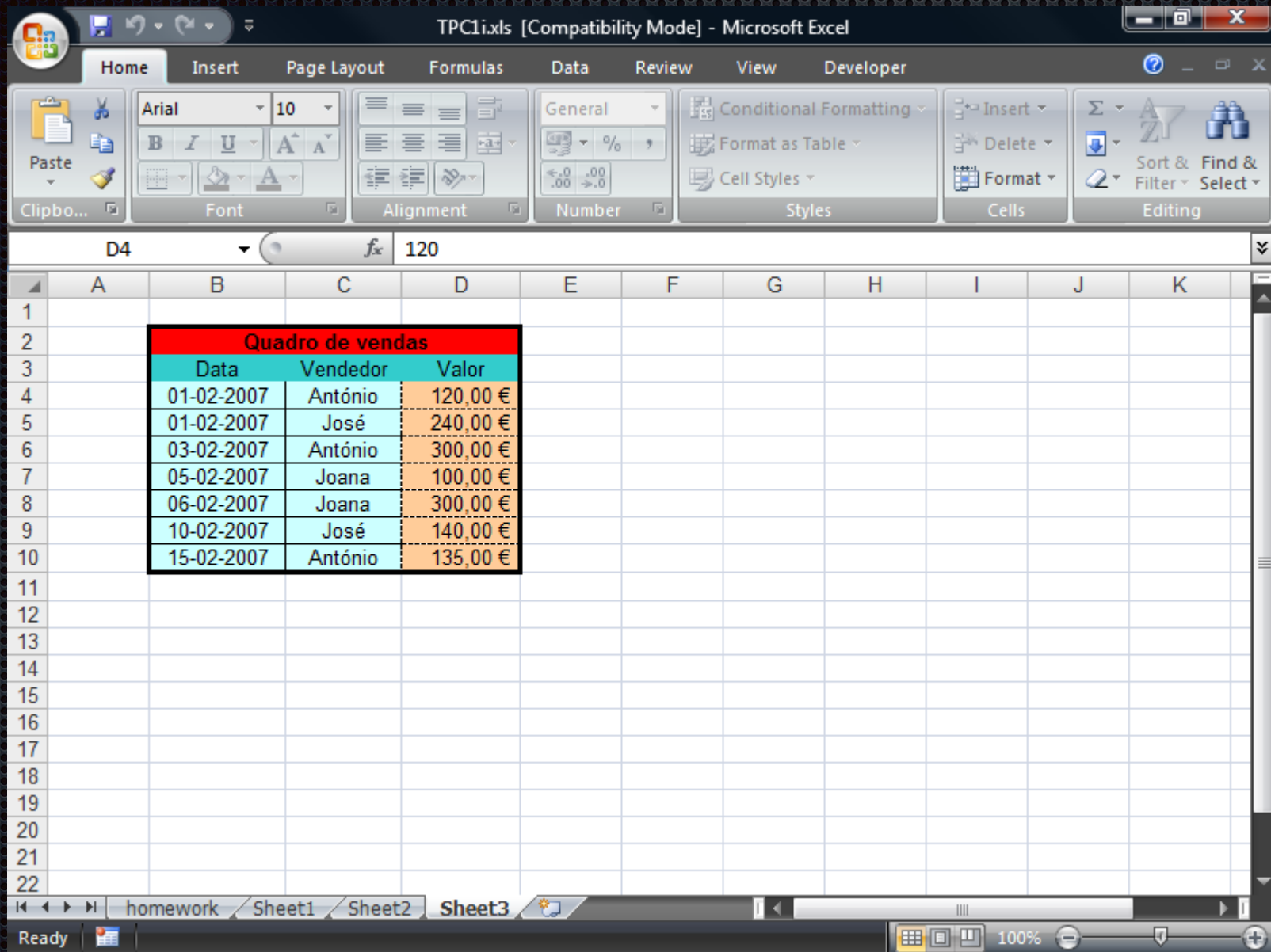
homework Sheet1 Sheet2 Sheet3

Ready 100%



# Exercício 1.3

## Folha III



The screenshot shows the Microsoft Excel interface with the following elements:

- Title Bar:** TPC1.xls [Compatibility Mode] - Microsoft Excel
- Ribbon:** Home, Insert, Page Layout, Formulas, Data, Review, View, Developer
- Home Tab Groups:**
  - Clipboard:** Paste
  - Font:** Arial, 10, Bold, Italic, Underline, Increase/Decrease Font Size, Text Color, Background Color
  - Alignment:** Left, Center, Right, Justify, Indent, Decrease/Increase Indent, Wrap Text, Merge & Center
  - Number:** General, Percentage, Decimal places, Increase/Decrease Decimal places
  - Styles:** Conditional Formatting, Format as Table, Cell Styles
  - Cells:** Insert, Delete, Format
  - Editing:** Sort & Filter, Find & Select
- Formula Bar:** D4, fx, 120
- Worksheet Grid:**

	A	B	C	D	E	F	G	H	I	J	K
1											
2		<b>Quadro de vendas</b>									
3		<b>Data</b>	<b>Vendedor</b>	<b>Valor</b>							
4		01-02-2007	António	120,00 €							
5		01-02-2007	José	240,00 €							
6		03-02-2007	António	300,00 €							
7		05-02-2007	Joana	100,00 €							
8		06-02-2007	Joana	300,00 €							
9		10-02-2007	José	140,00 €							
10		15-02-2007	António	135,00 €							
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
- Sheet Tab:** homework, Sheet1, Sheet2, Sheet3
- Status Bar:** Ready, 100%



# Alça de preenchimento

The image shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2		repetir										
3		repetir										
4		repetir										
5		repetir										
6		repetir										
7		repetir										
8		repetir										
9		repetir										
10		repetir										
11		repetir										
12												
13												
14												
15												
16												
17												
18												
19												

The context menu options are:

- Copy Cells
- Fill Formatting Only
- Fill Without Formatting



# Alça de preenchimento

The image shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L
1												
2		1										
3		1										
4		1										
5		1										
6		1										
7		1										
8		1										
9		1										
10		1										
11		1										
12		1										
13		1										
14												
15												
16												
17												
18												
19												

The context menu is open over the fill handle of cell B13, showing the following options:

- Copy Cells
- Fill Series
- Fill Formatting Only
- Fill Without Formatting

The status bar at the bottom shows: Ready, Sheet1, Sheet2, Sheet3, Average: 1, Count: 12, Sum: 12, 100%.



# Séries e Listas

The image shows a screenshot of Microsoft Excel with the 'Custom Lists' dialog box open. The background shows the 'Excel Options' task pane with the 'Popular' category selected. The 'Custom Lists' dialog has two main sections: 'Custom lists' and 'List entries'. The 'Custom lists' section contains a list with 'NEW LIST' selected. The 'List entries' section contains a list of days of the week: 'Segunda-feira', 'Terça-feira', 'Quarta-feira', 'Quinta-feira', 'Sexta-feira', 'Sábado', and 'Domingo'. Below these sections, there is a text box for 'Import list from cells' containing the range '\$B\$2:\$B\$13' and an 'Import' button. At the bottom of the dialog are 'OK' and 'Cancel' buttons. The 'Excel Options' task pane shows various settings for working with Excel, including checkboxes for 'Show Mini Toolbar on selection', 'Enable Live Preview', and 'Show Developer tab in the Ribbon'. It also includes options for 'Color scheme' (set to Black), 'ScreenTip style' (set to Show feature descriptions), and 'When creating new workbooks' (font, size, view, and sheets).

**Custom Lists**

Custom lists:

- NEW LIST
- Seg, Ter, Qua, Qui, Sex, Sáb, D
- Segunda-feira, Terça-feira, Qua
- Jan, Fev, Mar, Abr, Mai, Jun, Ju
- Janeiro, Fevereiro, Março, Abril,

List entries:

- Segunda-feira
- Terça-feira
- Quarta-feira
- Quinta-feira
- Sexta-feira
- Sábado
- Domingo

Press Enter to separate list entries.

Import list from cells:

**Excel Options**

Popular

Formulas

Proofing

Save

Advanced

Customize

Add-Ins

Trust Center

Resources

Change the most p

Top options for working with

Show Mini Toolbar on s

Enable Live Preview

Show Developer tab in t

Color scheme:

ScreenTip style:

Choose the languages you want to use with Microsoft Office:

Excel Options

Sheet1 Sheet2 Sheet3

Ready Average: 6,5 Count: 12 Sum: 78 100%



## Exercício 1.4

- Pretende construir-se uma folha para registo das presenças às sessões de formação
- Os nomes são colocados nas linhas
- As datas das sessões por colunas
- Posteriormente, completaremos esta folha com funções adequadas







# Validação dos dados de entrada

Book1 - Microsoft Excel

Home Insert Page Layout Formulas **Data** Review View Developer

Get External Data Refresh All Connections Properties Edit Links Sort Filter Clear Reapply Advanced Text to Columns Remove Duplicates Data Validation Consolidate What-If Analysis Group Ungroup Subtotal Outline

B3

A B C D E F G H I J K L

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19

Sheet1 Sheet2 Sheet3

Ready 100%

**Data Validation**

Settings Input Message Error Alert

Validation criteria

Allow:

Any value  Ignore blank

Whole number  
Decimal  
List  
Date  
Time  
Text length  
Custom

Apply these changes to all other cells with the same settings

Clear All OK Cancel



# Resultado:

The screenshot shows the Microsoft Excel interface with the following data in the spreadsheet:

	A	B	C	D	E	F	G	H	I	J
1										
2	<b>Nome</b>	<b>21-Fev</b>	<b>28-Fev</b>	<b>6-Mar</b>	<b>13-Mar</b>	<b>3-Abr</b>	<b>10-Abr</b>	<b>17-Abr</b>	<b>24-Abr</b>	
3	Ana Margarida Alexandre	1								
4	Ângela Cruz	1								
5	Angélique Silva	1								
6	Jessica Santos	1								
7	João Cruz	0,5								
8	Karine Barbosa	1								
9	Luís Fonseca	0,5								
10	Ricardo Dias	1								
11	Rute Monteiro	1								
12										
13										
14										
15										
16										
17										
18										
19										
20										

A yellow callout box with a black border points to cell I11 and contains the text: "Número entre 0 e 1".