Excel Mastery 1

The Big, Comprehensive Workbook: 220+ Lessons on Formulas, Functions, Charts and Data Visualization – Hands-On Labs with Full Solutions

Tabellab · tabellab.com

Excel Mastery 1: The Big, Comprehensive Workbook: 220+ Lessons on Formulas, Functions, Charts and Data Visualization – Hands-On Labs with Full Solutions

First edition 2026

© 2026 Babala Özdemir, Füllinsdorf, Switzerland. All rights reserved. No part of this book may be reproduced or distributed without the written permission of the publisher.

Publisher: Babala Özdemir (Tabellab), Füllinsdorf, Switzerland · tabellab.com

The lessons, examples and exercises were written for the Tabellab courses with the help of AI tools and reviewed editorially. All business names, people and figures in the worksheets are fictional. This book is for education only and is not professional advice. Despite careful checking, no guarantee of error-free content is given. Feedback is welcome at tabellab.com.

How to use this book

11 courses with 224 hands-on lessons on Excel: clear explanations, worked sheets, tasks and a full solutions appendix.

Every lesson has a goal, a short explanation, a picture of the worksheet and a list of tasks.

How to work with a lab. 1) Open a blank workbook in Excel, LibreOffice Calc or Google Sheets. 2) Type the numbers and labels shown in the worksheet picture into the same cells (the column letters and row numbers are printed around the table, so you always know which cell is A1). 3) The **shaded cells** are your work area – leave them empty and fill them in yourself, following the tasks. 4) When you are done, turn to the **Appendix: Solutions** at the end of the book, compare your formulas with the printed solutions, and correct your sheet. Look at the hints if you get stuck.

A note on menus. Some hints describe the interactive Tabellab editor (for example *click Format* or *Insert chart*). In Excel, use **Home → Conditional Formatting** for rules and **Insert → Charts** for charts; other spreadsheet programs have the same functions under similar names.

Interactive version. Every course in this book is also available as an interactive course on **tabellab.com** where the worksheets run in your browser and every cell is checked instantly.

This volume has 224 lessons.

Contents

Excel for Beginners: Your First Real Spreadsheet ... 9

Your First Workbook: Data, Formulas & AutoSum ... 10
Relative & Absolute References: Shares and a Discount ... 12
SUM, AVERAGE, MIN & MAX: Six Months of Sales ... 13
IF: Let Excel Decide (Reorder & Bonus) ... 14
SUMIF & COUNTIF: Totals by Category ... 15
XLOOKUP: Fill In Product and Price Automatically ... 16
Your First Charts: Column and Line ... 18
Mid-course project: Mini Dashboard with Profit, Margin & Conditional Formatting ... 19
Percent Change & Running Totals: July to December ... 21
SUMIFS & COUNTIFS: A Category × Channel Table ... 23
IF with AND & OR: Free Gifts and Priority Packing ... 25
Dates in Excel: Days to Ship & Late Orders ... 27
Text Formulas: Clean Product Names and Build SKU Codes ... 29
Setting Prices: Markup, .90 Endings & Margin ... 31
An Error-Proof Order Form: IFERROR & Data Validation ... 32
Repeat Customers: COUNTIF per Row, Duplicates & Revenue Share ... 34
Charts for Parts of a Whole: Pie and Stacked Columns ... 36
Top Sellers: RANK, LARGE & a Bar Chart of All Products ... 37
Planning 2027: Assumptions, ROUND & What-If ... 38
Final Project: The Second Half-Year Dashboard ... 40
Final exam ... 41

Excel for Finance ... 44

Cell references & percentages: price a spring sale ... 45
Absolute references ($) ... 48
SUM, AVERAGE, MIN & MAX ... 49
IF and nested IF ... 51
SUMIFS & COUNTIFS ... 52
VLOOKUP & XLOOKUP ... 53
ROUND & MROUND ... 54
Dates, payment terms & early-payment discount ... 55
Budget vs actual: variances in $ and %, favourable or unfavourable ... 56
INDEX & MATCH: a two-way lookup of exchange rates ... 58
Running balances: a cash book that shows what is left ... 60
Receivables aging: days past due, buckets & an approximate lookup ... 63
SUMPRODUCT & weighted averages: average cost, interest rate & margin ... 66
Break-even analysis: contribution margin, break-even point & margin of safety ... 68
Check your own work: cross-footing, tie-outs & IFERROR ... 70
Project: a quarterly management report from raw transactions ... 72
Price, volume & mix: why revenue beat the budget ... 75
Allocating shared costs: rent, IT and HR by driver ... 77
Sensitivity: a price × volume profit grid and the price you need ... 79
Final project: a 13-week cash forecast with a buffer and a credit-line need ... 81
Final exam ... 84

Excel Essentials: Beginner to Advanced ... 87

Entering Data & Your First Formulas ... 88
Relative, Absolute & Mixed References ... 90

Math & Stats Functions: SUM, AVERAGE, COUNT, MEDIAN ... 91
Logical Functions: IF, AND, OR, IFS, IFERROR ... 92
Lookups: VLOOKUP, HLOOKUP, INDEX/MATCH, XLOOKUP ... 94
Text Functions: LEFT, MID, TRIM, PROPER, TEXT & Joining ... 96
Date Functions: DATE, EDATE, EOMONTH, NETWORKDAYS ... 97
SUMIFS, COUNTIFS & AVERAGEIFS ... 98
Data Cleaning: Split Codes, Fix Case, Convert Text to Numbers ... 100
Mid-course Project: Monthly Sales Report ... 102
Percentages: Change, Share of Total, Margin vs Markup ... 104
Rounding, INT & MOD: Packs, Cartons and Price Points ... 106
Conditional Formatting with Rules & Formulas: Stock Alerts ... 108
Rankings & Top 3 Lists: RANK.EQ, LARGE, SMALL & Ties ... 110
Dynamic Arrays: FILTER, SORT, UNIQUE & Spill Ranges ... 112
Time Calculations: Hours Worked, Night Shifts & Overtime ... 114
Two-Way & Range Lookups: A Shipping Rate Card ... 116
Error-Proof Input Sheets: Data Validation, ISNUMBER & Check Cells ... 118
What-If Models: Scenario Switch, Break-even & a Profit Curve ... 120
Final Project: Quarterly Sales Dashboard ... 122
Final exam ... 124

Advanced Excel Formulas & Functions Masterclass ... 127

Advanced Lookups: Two-Way, Multi-Criteria and Tiers ... 128
Multi-Criteria SUMIFS, COUNTIFS, AVERAGEIFS and MAXIFS ... 130
SUMPRODUCT with Boolean Arrays ... 132
Array Math inside SUM, AVERAGE, MAX and MATCH ... 134
Nested Logic: IFS, SWITCH, CHOOSE and IFERROR ... 136
Text Formulas: FIND, MID, SUBSTITUTE, TEXT and TEXTJOIN ... 138
Date & Time Formulas: EOMONTH, NETWORKDAYS, WEEKNUM, HOUR ... 140
Statistical Formulas: RANK, PERCENTRANK, LARGE and Conditional MEDIAN ... 142
Financial Formulas: PMT, PPMT, NPV and XNPV ... 144
Mid-course project: Audit and Repair a Broken Report ... 146
Lookup Edge Cases: Last Match, Wildcard Search and Fallback Chains ... 148
Point-in-Time Lookups: Price on a Date, Last Order and Days Since ... 151
Criteria Lists: Array Constants, Membership Tests and Exclusion Lists ... 153
Expanding Ranges: Running Totals, Nth Order and Credit-Limit Checks ... 155
Text Classification: Keyword Categories, Code Parsing and Code Checks ... 157
Due Dates & Receivables Aging: WORKDAY Roll-Forward and Aging Buckets ... 159
2D Conditional Sums: SUMPRODUCT over Grids with Row and Column Criteria ... 161
Outlier Checks: Z-Scores, Conditional Percentiles and TRIMMEAN ... 163
Returns & Payback: IRR, Cumulative Cash Flow and the Payback Year ... 165
Scenario Switch & Two-Way Sensitivity Grid: Price × Volume ... 166
Control Checks: Cross-Footing, Duplicate Numbers and Unknown Keys ... 168
Final Project: April Regional Performance Report with Dashboard Chart ... 170
Final exam ... 172

Excel Charts & Data Visualization ... 175

Choosing the Right Chart: Column, Line, Pie or Bar? ... 176
Column & Bar Charts Done Right: Sorted, Labelled, Titled ... 178
Line & Area Charts for Trends: Two Years, One Axis ... 180
Pie & Doughnut Charts: When They Work (and When They Don't) ... 182
Stacked & 100% Stacked Charts: Composition Over Time ... 184
Combo Charts & the Secondary Axis: Revenue and Margin Together ... 185
Scatter Plots & Trendlines: Does Warm Weather Sell Cold Brew? ... 186

Histograms & Distributions: How Big Is a Typical Order? ... 188
Waterfall Charts: The Bridge From Last Year's Profit to This Year's ... 190
Conditional Formatting, Sparklines & a Mini Dashboard ... 192
Actual vs Target: Variance %, a Target Line and the Biggest Miss ... 194
Pareto Charts: Which Few Products Bring In Most of the Revenue? ... 196
Noisy Data: Moving Averages and a Smoothed Trend Line ... 198
Indexed Charts: Comparing Growth From Different Starting Sizes ... 200
Survey Results: 100% Stacked Bars and a Net Satisfaction Score ... 202
Scatter Quadrants: Price vs Volume for the Menu ... 204
Interactive Charts: One Selector Cell Drives the Whole Chart ... 206
Comparing Distributions: Median, IQR and Side-by-Side Histograms ... 208
Budget Variance: Diverging Bars and Colour by Sign ... 211
Uneven Time Steps: Why a Scatter With Lines Beats a Line Chart ... 213
Forecast Charts: Actuals, a Linear Forecast and the Hand-Over Point ... 215
Final Project: Brightleaf 2026 Annual Sales Dashboard ... 217
Final exam ... 219

What-If Analysis: Scenarios, Data Tables & Goal Seek ... 222

Input-Driven Models: Inputs vs Calculations ... 223
Scenario Selector: Base, Best and Worst with CHOOSE and INDEX ... 225
One-Variable Data Table, Built with Formulas ... 227
Two-Variable Data Table with Mixed References ... 229
Goal Seek by Hand: Bisection Table vs the Algebraic Solution ... 231
Break-Even and Target Profit: Solve Instead of Seek ... 233
Tornado Sensitivity: Which Driver Moves Profit Most? ... 235
Monte-Carlo-Style Scenarios: Expected Value and the Chance of a Loss ... 237
Spider Chart: EBIT from –20% to +20% for Every Driver ... 239
Sales Mix What-If: Weighted Contribution and Break-Even for Three Lamps ... 241
Step Fixed Costs: When Extra Volume Needs a Second Shift ... 243
Price Changes: How Much Volume Can You Lose or Must You Gain? ... 245
Scenario Report: EBIT Deltas vs Base and a Probability-Weighted View ... 247
Non-Linear Models: Volume Discounts and a Goal Search Table ... 249
Constrained Mix: Contribution per Bottleneck Hour, Solved by Hand ... 251
Currency What-If: Costs in EUR, Prices in USD and the Break-Even Rate ... 253
Cash Runway What-If: Monthly Cash, the Lowest Point and the Funding Need ... 255
Reverse Stress Test: How Far Can Each Driver Move Before EBIT Hits the Floor? ... 257
Model Checks Before Every What-If Run: Totals, Probabilities and Error Counts ... 259
Final Project: The What-If Dashboard for the 2027 Plan ... 261
Final exam ... 263

Excel Dashboards & Reports ... 266

Plan the Dashboard: Questions, KPIs & Layout ... 267
KPI Cards with Green/Red Rules ... 269
The Trend Chart: This Year vs Last Year ... 271
Category Breakdown: A Sorted Bar Chart with Labels ... 272
Sparklines: A Trend in Every Region Row ... 274
Target vs Actual: Combo Charts & the Secondary Axis ... 276
A Month Picker: INDEX/MATCH & SUMIFS-Driven KPIs ... 278
Mid-Course Project: The One-Page Sales Report ... 280
Margin KPIs: Gross Profit and Margin % by Category ... 281
Ratio KPIs: Conversion Rate and Average Order Value ... 283
Three-Level Status: On Track, Watch, Behind ... 284
Who Drove the Growth? Contribution in Percentage Points and a Sales Bridge ... 286

Top 5 Products + "All Other": A Ranking That Still Adds Up ... 288
Channel Mix: Stacked Columns and the Web Share ... 290
Returns: Gross vs Net Sales and an Alert Rule ... 292
Stock KPIs: Weeks of Cover and Sell-Through ... 293
Budget Variances: Favourable, Unfavourable and What Needs a Comment ... 294
Year-End Pace: Run Rate vs Required Monthly Sales ... 296
Control Checks Before You Publish: Totals, Blanks and Duplicates ... 298
Final Project: The H1 Executive KPI Dashboard ... 300
Final exam ... 302

Excel Basics: From Your First Formula to a Savings Tracker ... 305

Cells, Rows & Columns: Your First Entries ... 307
Your First Formulas: + − × ÷ and Brackets ... 308
SUM, AVERAGE, MIN & MAX ... 309
Copying Formulas & Relative References ... 310
Percentages & Your First IF ... 311
Mini Budget & Your First Chart ... 312
Locking a Cell with $: One Rate for Every Row ... 313
Counting with COUNT, COUNTA & COUNTIF ... 315
SUMIF & AVERAGEIF: Totals by Category ... 317
ROUND & ROUNDUP: Splitting the Pizza Bill ... 319
Dates as Numbers: Due Dates, Days Left & Weekdays ... 320
Text Formulas: Joining Names with & and Tidying with PROPER ... 322
Conditional Formatting: Let Colours Point Out the Problems ... 323
Looking Things Up with XLOOKUP: The Café Order ... 325
Decisions with IF, AND & OR: Shipping Jamie's Book Orders ... 327
Project: Jamie's Savings Goal Tracker ... 329
Percent Change: How Much More Does the Shopping Cost? ... 331
Interest on Interest: Watching Savings Grow Year by Year ... 333
Dropdown Lists & Wildcards: Stop Typos Before They Cost You ... 335
Final Project: The Bake Sale Dashboard ... 337
Final exam ... 340

Google Sheets for Business ... 343

Sharing-Ready Tables: Tidy Data, Totals and Checks ... 344
SUMIFS and COUNTIFS Reports (and QUERY in Sheets) ... 346
Lookups: VLOOKUP, XLOOKUP and INDEX/MATCH (plus IMPORTRANGE) ... 348
Text and Dates: Clean Names, Build IDs and Due Dates ... 350
Data Validation Logic: Checking Form Responses with Formulas ... 352
Conditional Formatting for a Shared Inventory Sheet ... 354
A One-Page KPI Dashboard with a Chart ... 356
Team Task Tracker: Status Counts and Overdue Items ... 358
Live Lists with FILTER, UNIQUE and SORT ... 360
Conditional Averages, Highs and Lows: AVERAGEIFS, MAXIFS and MINIFS ... 362
Duplicate Form Responses: Matching Keys, Running Counts and Highlighted Repeats ... 364
Monthly and Weekday Reporting with EOMONTH and WEEKDAY ... 366
Volume Discounts and Shipping Bands: Approximate-Match Lookups ... 368
Budget vs Actual: Variance %, Review Flags and Highlighted Overspends ... 371
Receivables Aging: Days Overdue, Buckets and an Aging Chart ... 373
Weekly Sales Trend: Running Total, Week-over-Week Change and a 4-Week Average ... 375
Updating a Price List: Percentage Increase, Price Points and Margin Checks ... 377
Team Timesheet: Hours from Clock Times, Overtime and Billable Share ... 379
Customer Concentration: Revenue Shares, Cumulative % and a Pareto Chart ... 381

Capstone Project: Q4 Channel Dashboard for the Shared Sheet ... 383
Final exam ... 386

Excel for Accountants: Reconciliations, Ledgers & Month-End ... 389

Trial Balance from a GL Export: SUMIFS & the Debits = Credits Check ... 391
Mapping Accounts to Financial Statement Lines with XLOOKUP ... 393
Bank Reconciliation with Matching Flags: COUNTIFS on Reference and Amount ... 396
Accounts Receivable Ageing: Days Past Due, Buckets with IFS & a Chart ... 398
Prepayments & Accruals: a Monthly Release Schedule ... 400
Fixed Asset Register: SLN, Accumulated Depreciation, NBV & DB ... 403
Budget vs Actual: Variance %, Favourable / Unfavourable & Materiality Flags ... 405
Month-End Close: Checklist Deadlines with WORKDAY & the Intercompany Check ... 407
Allowance for Doubtful Accounts: a Provision Matrix from the Ageing and the Month-End Entry ... 409
Goods Received Not Invoiced: Accruing for Deliveries without a Supplier Invoice ... 411
Payroll Cut-Off and Leave Liability: Accrued Wages and Unused Vacation Days ... 413
Inventory at Month End: Count vs Book, Shrinkage and a Slow-Moving Provision ... 415
Revenue Cut-Off: Shipments, Delivery Terms and Invoices around the Period End ... 418
Deferred Revenue: Earning Service Plans by the Day with Overlapping Date Ranges ... 421
Bank Loan Schedule: PMT, Interest vs Principal and the Current / Non-Current Split ... 423
Foreign-Currency Revaluation at Month End: Open Items, Closing Rates and Unrealised FX ... 425
Sales-Tax Control Account: Expected vs Charged Tax, Net Payable and the Reconciliation ... 428
Balance Sheet Reconciliation Tracker: GL vs Support, Unexplained Differences and Status ... 430
Cash Flow Statement, Indirect Method: from Net Profit to the Change in Cash (Waterfall Chart) ... 433
Final Project: a Month-End Close Dashboard for Quillmark UK ... 435
Final exam ... 437

Excel IF & Logical Functions: From Simple IF to IFS, SWITCH & Nested Logic ... 440

Simple IF: Pass/Fail and Over/Under Budget ... 442
IF with AND, OR & NOT: Eligibility Rules ... 444
Nested IF vs IFS: Grade Bands & Commission Tiers ... 446
SWITCH, CHOOSE & XLOOKUP: Replacing Nested IFs ... 448
IF with Text: SEARCH, LEFT, EXACT & LEN ... 450
IF with Dates: Overdue Invoices & Weekend Deliveries ... 452
Error Handling: IFERROR vs IFNA, ISBLANK & ISNUMBER ... 454
Mid-course project: Logic-Driven Status Dashboard with COUNTIFS, SUMIFS & IF Arrays ... 456
Logic as Numbers: TRUE×1, Double Negation & SUMPRODUCT Counts ... 458
Tolerance Rules: ABS with an Amount Limit and a Percent Limit ... 460
Progressive Tiers: Marginal Rebates with MIN and MAX ... 462
Boundary Traps: Round Before You Compare ... 464
Two-Key Rule Tables: INDEX & MATCH Instead of an IF Pyramid ... 466
Decision Order: Exceptions First in a Returns Policy ... 468
Logic with Lists: Holiday Checks with COUNTIF & Shift Premiums ... 470
Conditional Statistics: AVERAGEIFS, MAXIFS & MINIFS with Exclusions ... 472
Testing Your Logic: Edge-Case Test Grids & Mismatch Counts ... 474
A Rule Engine for Data Checks: Count Broken Rules & List the Reasons ... 476
LET: Name the Parts of a Long Logical Formula ... 478
Final Project: Wholesale Order Approval Dashboard ... 480
Final exam ... 482

Appendix: Solutions ... 485

Excel for Beginners: Your First Real Spreadsheet

Build a small online shop's sales workbook from scratch – formulas, $ references, IF, SUMIF, XLOOKUP, charts and a mini dashboard – then percent change and running totals, SUMIFS, IF with AND and OR, dates, text formulas, .90 pricing, IFERROR and data validation, repeat customers, pie and stacked charts, top sellers, a 2027 plan and a half-year dashboard: 20 hands-on labs. · Beginner · 20 lessons

- Your First Workbook: Data, Formulas & AutoSum
- Relative & Absolute References: Shares and a Discount
- SUM, AVERAGE, MIN & MAX: Six Months of Sales
- IF: Let Excel Decide (Reorder & Bonus)
- SUMIF & COUNTIF: Totals by Category
- XLOOKUP: Fill In Product and Price Automatically
- Your First Charts: Column and Line
- Mid-course project: Mini Dashboard with Profit, Margin & Conditional Formatting
- Percent Change & Running Totals: July to December
- SUMIFS & COUNTIFS: A Category × Channel Table
- IF with AND & OR: Free Gifts and Priority Packing
- Dates in Excel: Days to Ship & Late Orders
- Text Formulas: Clean Product Names and Build SKU Codes
- Setting Prices: Markup, .90 Endings & Margin
- An Error-Proof Order Form: IFERROR & Data Validation
- Repeat Customers: COUNTIF per Row, Duplicates & Revenue Share
- Charts for Parts of a Whole: Pie and Stacked Columns
- Top Sellers: RANK, LARGE & a Bar Chart of All Products
- Planning 2027: Assumptions, ROUND & What-If
- Final Project: The Second Half-Year Dashboard

Your First Workbook: Data, Formulas & AutoSum

Lesson 1 · about 17 min

> **Goal.** You turn the June sales list of a small online stationery shop into revenue figures with your first formulas and AutoSum.

A spreadsheet is a grid of **cells**. Each cell has an address made of its column letter and row number: **B2** is column B, row 2. You type text (labels), numbers (data) or **formulas** (calculations) into cells.

Every formula starts with **=**. Instead of typing numbers into it, you point to the cells that hold them: `=B2*C2` multiplies units by price. If a number in B2 changes, the result updates by itself – that is the whole point of a spreadsheet.

You rarely write the same formula six times. Write it once in the first row, then **copy it down**: Excel moves the cell references with it, so row 3 becomes `=B3*C3`, row 4 `=B4*C4` and so on.

SUM adds a whole range in one go: `=SUM(D2:D7)` adds D2 to D7. The colon means *from … to*. In Excel, **AutoSum** (Alt + =) writes this formula for you.

In Excel

- Click a cell and start typing. **Enter** confirms and moves down, **Tab** moves right.
- Copy a formula down by dragging the small square at the bottom right of the cell (the **fill handle**) or by double-clicking it.
- AutoSum: select the cell below a column of numbers and press **Alt + =** (Mac: **Cmd + Shift + T**), then Enter.

	A	B	C	D
1	**Product**	**Units sold**	**Price**	**Revenue**
2	Notebook A5	340	12.50	
3	`Gel pens (5-pack)`	520	6.90	
4	Planner 2027	180	24.00	
5	Sticky notes	610	3.80	
6	Washi tape set	260	9.50	
7	Fountain pen	75	39.00	
8	**Total**			
9				
10	Top product by revenue:			

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D7**, calculate the revenue of each product: units sold × price. Write the formula in D2 and copy it down to D7.
2. In **B8**, add up all units sold with **SUM**.
3. In **D8**, calculate the total revenue of June with **SUM**.

4. Which product brought in the **most revenue**? Type its name in **B10**.

Relative & Absolute References: Shares and a Discount

Lesson 2 · about 17 min

> **Goal.** You calculate each product's share of total revenue and a 15% sale price, using $ to keep one cell fixed while you copy.

When you copy a formula down, Excel moves every reference with it. That is a **relative reference**, and most of the time it is exactly what you want.

Sometimes one cell must **not** move: the total in B8, or the discount rate in B10. Put a **$** in front of the column and the row: `$B$8`. That is an **absolute reference** – it stays B8 in every row.

A share is a part divided by the whole: `=B2/$B$8`. Without the $, the copy in row 3 would divide by B9, which is empty, and Excel shows **#DIV/0!**.

Keep assumptions such as a discount rate in **their own cell** instead of typing 15% into every formula. If the discount changes to 20%, you change one cell and the whole sheet follows.

In Excel

- While editing a formula, click on a reference and press **F4** (Mac: **Cmd + T**) to add the $ signs.
- Format shares as percentages with **Home > %** (Ctrl + Shift + %).

	A	B	C	D	E
1	**Product**	**Revenue**	**Share**	**Price**	**Sale price**
2	Notebook A5	4,250.00		12.50	
3	Gel pens (5-pack)	3,588.00		6.90	
4	Planner 2027	4,320.00		24.00	
5	Sticky notes	2,318.00		3.80	
6	Washi tape set	2,470.00		9.50	
7	Fountain pen	2,925.00		39.00	
8	**Total**	**19,871.00**			
9					
10	Summer discount	15%			
11					
12	Largest share:				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **C2:C7**, calculate each product's share of the total revenue in B8. Fill C2 and copy it down to C7.
2. In **E2:E7**, calculate the sale price with the summer discount in **B10**. Fill E2 and copy it down to E7.
3. Which product has the **largest share** of revenue? Type its name in **B12**.

SUM, AVERAGE, MIN & MAX: Six Months of Sales

Lesson 3 · about 17 min

> **Goal.** You summarise the shop's first half-year: total, average, best and weakest month, and what a typical order is worth.

Functions are ready-made formulas. They all look the same: a **name**, then the **arguments** in brackets – usually a range: `=AVERAGE(C2:C7)`.

SUM adds, **AVERAGE** divides the sum by the number of values, **MAX** returns the largest and **MIN** the smallest value. Empty cells and text are ignored.

The **average order value** tells you what a typical order is worth: total revenue ÷ number of orders. It is one of the first numbers every online shop looks at.

Never include a total row in a range you summarise: `=AVERAGE(C2:C9)` with a total in C9 would count the whole half-year as one more month.

	A	B	C
1	**Month**	**Orders**	**Revenue**
2	Jan 2026	412	9,870.00
3	Feb 2026	388	9,140.00
4	Mar 2026	455	11,020.00
5	Apr 2026	430	10,460.00
6	May 2026	498	12,310.00
7	Jun 2026	521	13,050.00
8			
9	**Total**		
10	Average per month		
11	Best month		
12	Weakest month		
13			
14	Average order value		

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **B9** and **C9**, add up the orders and the revenue of the six months.
2. Check that **B9** holds the total number of orders.
3. In **C10**, calculate the average revenue per month.
4. In **C11**, find the revenue of the best month with **MAX**.
5. In **C12**, find the revenue of the weakest month with **MIN**.
6. In **C14**, calculate the average order value: total revenue ÷ total orders.

IF: Let Excel Decide (Reorder & Bonus)

Lesson 4 · about 17 min

> **Goal.** You let Excel flag every product that must be reordered and decide whether the team earned its monthly bonus.

IF checks a condition and returns one of two results: `=IF(condition, value if true, value if false)`. Example: `=IF(B2<=C2,"Reorder","OK")`.

Conditions compare two values with **=**, **<>**, **<**, **<=**, **>**, **>=**. `B2<=C2` is true when the stock is at or below the reorder level.

Text results go in double quotes ("Reorder"). Numbers and cell references do not: `=IF(B10>=B11,B12,0)` pays the bonus in B12 or nothing.

Keep the limits (reorder levels, the target, the bonus) in cells, not inside the formula. Then the rule is visible and easy to change.

	A	B	C	D
1	**Product**	**In stock**	**Reorder at**	**Status**
2	Notebook A5	120	150	
3	`Gel pens (5-pack)`	340	200	
4	Planner 2027	45	60	
5	Sticky notes	500	300	
6	Washi tape set	80	100	
7	Fountain pen	30	20	
8				
9				
10	June revenue	13,050.00		
11	Monthly target	12,000.00		
12	Team bonus	250.00		
13	Bonus paid			

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D7**, show **Reorder** when the stock is at or below the reorder level, otherwise **OK**. Fill D2 and copy it down.
2. Check the gel pens in **D3**: 340 in stock, reorder at 200.
3. In **B13**, pay the team bonus from B12 if the June revenue reached the target in B11, otherwise 0.

SUMIF & COUNTIF: Totals by Category

Lesson 5 · about 17 min

> **Goal.** You turn twelve single orders into a summary by category: revenue and number of orders for paper, pens and planners.

SUMIF adds only the rows that match a condition: `=SUMIF(where to look, what to look for, what to add)`. `=SUMIF($B$2:$B$13,E2,$C$2:$C$13)` adds the amounts of every order whose category equals E2.

COUNTIF counts the matching rows: `=COUNTIF($B$2:$B$13,E2)`.

Point the condition to a cell (E2) instead of typing "Paper". Then one formula works for every category when you copy it down – the ranges keep their $, the condition moves.

A quick check: the category totals must add up to the sum of all orders. If they do not, a category is misspelt somewhere.

	A	B	C	D	E	F	G
1	**Order**	**Category**	**Amount**		**Category**	**Revenue**	**Orders**
2	1001	Paper	48.50		Paper		
3	1002	Pens	23.90		Pens		
4	1003	Planners	72.00		Planners		
5	1004	Paper	31.20		**Total**		
6	1005	Pens	18.40				
7	1006	Paper	64.80				
8	1007	Planners	48.00				
9	1008	Pens	41.30				
10	1009	Paper	27.60				
11	1010	Planners	96.00				
12	1011	Pens	13.80				
13	1012	Paper	52.40				
14							
15	Busiest category:						

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **F2:F4**, add up the revenue of each category with **SUMIF**. Fill F2 and copy it down to F4.
2. In **G2:G4**, count the orders of each category with **COUNTIF**.
3. In **F5**, add up the three categories. It must equal the sum of all twelve orders.
4. Which category has the **most orders**? Type it in **B15**.

XLOOKUP: Fill In Product and Price Automatically

Lesson 6 · about 18 min

> **Goal.** You build an order form that finds the product name and price from a product code, so nobody has to copy prices by hand.

A **lookup** finds a value in a table: you give a key (the product code), Excel finds it in one column and returns the value from the same row in another column.

`=XLOOKUP(A11,$A$2:$A$7,$C$2:$C$7)` looks for the code in A11 in the code column A2:A7 and returns the matching price from C2:C7. The ranges get $ so they stay put when you copy the formula down.

In older Excel versions use **VLOOKUP**: `=VLOOKUP(A11,$A$2:$C$7,3,FALSE)` – the 3 is the column number inside the table, FALSE means exact match. Forgetting FALSE is the classic VLOOKUP mistake.

If a code does not exist, the lookup returns **#N/A**. That is useful: it tells you the order form has a typo.

In Excel

- XLOOKUP is available in Excel 365, Excel 2021 and later, and in Google Sheets.
- Turn the price list into a table with **Ctrl + T**, and new products are included in the lookup automatically.

	A	B	C	D	E
1	**Code**	**Product**	**Price**		
2	NB-A5	Notebook A5	12.50		
3	GP-5	Gel pens (5-pack)	6.90		
4	PL-27	Planner 2027	24.00		
5	SN-100	Sticky notes	3.80		
6	WT-SET	Washi tape set	9.50		
7	FP-01	Fountain pen	39.00		
8					
9					
10	**Code**	**Product**	**Price**	**Qty**	**Line total**
11	PL-27			3	
12	GP-5			5	
13	WT-SET			2	
14	NB-A5			4	
15	**Order total**				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **B11:B14**, look up the product name for each code. Fill B11 and copy it down to B14.
2. In **C11:C14**, look up the price for each code.

3. In **E11:E14**, calculate each line total: price × quantity.
4. In **E15**, add up the order total.

Your First Charts: Column and Line

Lesson 7 · about 18 min

> **Goal.** You show the half-year as a column chart of revenue and a line chart of orders, each with a clear title.

A chart turns a column of numbers into a picture people understand in seconds. Pick the type by the question: **columns compare** values side by side, a **line shows a trend** over time.

Select the data **with** its header row and label column (A1:B7). Excel uses the header as the series name and the months as labels on the horizontal axis.

Every chart needs a **title that says what it shows**, for example *Monthly revenue H1 2026*. Data labels on the columns let readers see the exact numbers without guessing from the axis.

Leave totals out of a chart: a total is not a month, and its giant column would squash all the others.

In Excel

- Select A1:B7, then **Insert > Charts > Clustered Column**.
- For the orders, select A1:A7, hold **Ctrl** (Mac: **Cmd**) and add C1:C7, then **Insert > Line**.
- Click the chart, then the + button for Chart Title and Data Labels.

	A	B	C
1	**Month**	**Revenue**	**Orders**
2	Jan 2026	9,870.00	412
3	Feb 2026	9,140.00	388
4	Mar 2026	11,020.00	455
5	Apr 2026	10,460.00	430
6	May 2026	12,310.00	498
7	Jun 2026	13,050.00	521
8			
9	Best month:		

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. Insert a **column chart** of the monthly revenue (`A1:B7`) with **data labels** and a title that contains the word *revenue*.
2. Insert a **line chart** of the orders per month (`A1:A7` and `C1:C7`) with a title that contains the word *orders*.
3. Which month had the **highest revenue**? Type it in **B9**.

Mid-course project: Mini Dashboard with Profit, Margin & Conditional Formatting

Lesson 8 · about 20 min

> **Goal.** You finish the half-year report: profit and margin per month, the best months highlighted in green and a sparkline of the revenue trend.

Profit is what is left of the revenue after the costs: `=B2-C2`. The **margin** shows it as a share of revenue: `=D2/B2`. A margin of 30% means 30 cents of every dollar of sales is profit.

For the total margin, divide total profit by total revenue (`=D8/B8`). Averaging the six monthly margins gives a slightly different – and wrong – answer, because the months have different revenue.

Conditional formatting colours cells by a rule, for example every margin above 30% in green. The colours update by themselves when the numbers change.

A **sparkline** is a tiny chart inside one cell. It shows the trend of a row or column at a glance – perfect for a one-screen dashboard.

In Excel

- Select E2:E7, then **Home > Conditional Formatting > Highlight Cells Rules > Greater Than**, type 30% and pick a green fill.
- Click B10, then **Insert > Sparklines > Line** and choose B2:B7 as the data range.

	A	B	C	D	E
1	**Month**	**Revenue**	**Costs**	**Profit**	**Margin**
2	Jan 2026	9,870.00	7,410.00		
3	Feb 2026	9,140.00	7,220.00		
4	Mar 2026	11,020.00	7,940.00		
5	Apr 2026	10,460.00	7,850.00		
6	May 2026	12,310.00	8,370.00		
7	Jun 2026	13,050.00	8,610.00		
8	**Total**	**65,850.00**	**47,400.00**		
9					
10	Revenue trend				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D7**, calculate the profit of each month: revenue − costs.
2. In **E2:E7**, calculate the margin of each month: profit ÷ revenue.
3. In **D8**, add up the profit of the six months.
4. In **E8**, calculate the margin of the whole half-year.
5. Highlight every monthly margin **greater than 30%** in **E2:E7** in green.

6. Add a **line sparkline** in **B10** that shows the revenue trend of B2:B7.

Percent Change & Running Totals: July to December

Lesson 9 · about 20 min

> **Goal.** You measure how the shop's revenue changed from month to month in the second half-year, build a running total with a half-locked range, compare H2 with H1 and colour the months that shrank.

The second half-year is over and the shop owner asks two questions: *did we grow from month to month?* and *how much have we sold so far?* Both are everyday spreadsheet jobs.

Percent change = new ÷ old − 1. August revenue 11,960 against July 12,480: =B4/B3−1 = **−4.2 %**. The same is (new − old) ÷ old. Format the result as a percentage. Forgetting the −1 gives 95.8 %, which looks like a share, not a change.

A **running total** adds everything from the first month up to the current row. Lock only the **start** of the range: =SUM(**$B$3**:B3). Copied down, the start stays at B3 while the end moves: =SUM($B$3:B4), =SUM($B$3:B5) … Locking both ends would show the full total in every row.

The same −1 trick compares bigger periods: H2 total ÷ H1 total − 1. Finally, **conditional formatting** with *Less than 0* colours the months that shrank, so nobody has to read every percentage.

In Excel

- Format changes as percent with **Ctrl + Shift + %**.
- Add the $ to the start of the range only: click into `B3` in the first reference and press **F4** once.

	A	B	C	D
1	**Month**	**Revenue**	**Change vs previous month**	**Running total H2**
2	`Jun 2026 (last month of H1)`	13,050.00		
3	Jul 2026	12,480.00		
4	Aug 2026	11,960.00		
5	Sep 2026	13,720.00		
6	Oct 2026	14,310.00		
7	Nov 2026	16,950.00		
8	Dec 2026	21,400.00		
9				
10	`H1 total (Jan–Jun)`	65,850.00		
11	`H2 total (Jul–Dec)`	90,820.00		
12	Growth H2 vs H1			

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **C3:C8**, calculate the change of each month against the month before: new ÷ old − 1. Fill C3 and copy it down to C8.
2. In **D3:D8**, build a running total of the H2 revenue. Write =SUM($B$3:B3) in D3 and copy it down to D8.
3. In **B12**, calculate the growth of the second half-year against the first.

4. Colour every month with a **negative change** in **C3:C8** light red (rule *Less than* 0).

SUMIFS & COUNTIFS: A Category × Channel Table

Lesson 10 · about 20 min

> **Goal.** You split twenty orders by category and by sales channel in one table with SUMIFS and mixed references, count the large marketplace orders and find the average marketplace order.

The shop now also sells on an online marketplace. The owner wants one small table: revenue per **category** and per **channel** (Website / Marketplace). SUMIF from lesson 5 handles one condition; **SUMIFS** handles several: =SUMIFS(what to add, range 1, condition 1, range 2, condition 2).

=SUMIFS($D$2:$D$21,$B$2:$B$21,$F2,$C$2:$C$21,G$1) adds the amounts whose category equals F2 **and** whose channel equals G1. Note the order: in SUMIFS the range to add comes **first** (in SUMIF it comes last).

One formula can fill the whole table if the condition cells are **mixed references**: **$F2** keeps the column F but lets the row move; **G$1** keeps row 1 but lets the column move. Copied right and down, every cell picks its own category and channel.

COUNTIFS counts with several conditions, and conditions can compare: ">50" counts amounts above 50. **AVERAGEIF** averages the matching rows. Check: the table total must equal the sum of all orders.

	A	B	C	D	E	F	G	H
1	**Order**	**Category**	**Channel**	**Amount**		**Category**	**Website**	**Marketplace**
2	2001	Paper	Website	48.50		Paper		
3	2002	Pens	Marketplace	23.90		Pens		
4	2003	Planners	Website	72.00		Planners		
5	2004	Paper	Marketplace	31.20		**Total**	**0.00**	**0.00**
6	2005	Pens	Website	18.40				
7	2006	Paper	Website	64.80		Marketplace orders above 50		
8	2007	Planners	Marketplace	48.00		Average marketplace order		
9	2008	Pens	Website	41.30				
10	2009	Paper	Marketplace	57.60		Channel with more planner revenue:		
11	2010	Planners	Website	96.00				
12	2011	Pens	Marketplace	13.80				
13	2012	Paper	Website	52.40				
14	2013	Planners	Marketplace	120.00				
15	2014	Paper	Website	29.90				
16	2015	Pens	Marketplace	62.50				
17	2016	Planners	Website	24.00				
18	2017	Paper	Marketplace	38.70				
19	2018	Pens	Website	55.20				
20	2019	Planners	Marketplace	72.00				
21	2020	Paper	Website	44.10				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **G2:H4**, add up the revenue per category and channel with **SUMIFS**. Write one formula in G2 with $F2 and G$1, then copy it to the whole table.
2. In **G7**, count the **marketplace** orders with an amount **above 50** using COUNTIFS.
3. In **G8**, calculate the average amount of a marketplace order with AVERAGEIF.
4. Which channel brings in **more planner revenue**? Type it in **G10**.

IF with AND & OR: Free Gifts and Priority Packing

Lesson 11 · about 16 min

> **Goal.** You let Excel decide which orders get a free gift (two conditions that must both be true) and which are packed first (either condition is enough), and count the gifts to pack.

The shop runs two rules in the packing room. **Free gift:** a washi tape for **new** customers whose order is **at least 40**. **Priority packing:** every **Express** order **or** any order of **100 or more**.

AND(…) is TRUE only if **all** its conditions are true; **OR(…)** is TRUE if **at least one** is. Put them inside IF: =IF(AND(B2>=$B$16,C2="New"),"Yes","No") and =IF(OR(D2="Express",B2>=$B$17),"Priority","Normal").

Test the edge cases: order 3005 is exactly 40.00, so >= gives a gift while > would not. Order 3012 is 58.20 from a **returning** customer: with AND no gift, with OR (by mistake) a gift. Order 3003 is Standard but 118.00: OR makes it Priority.

Keep the limits in cells ($B$16, $B$17) so the rules can change without touching the formulas, and count the results with COUNTIF to know how many gifts to put on the packing table.

	A	B	C	D	E	F
1	**Order**	**Amount**	**Customer**	**Shipping**	**Free gift?**	**Packing**
2	3001	34.50	New	Standard		
3	3002	52.80	New	Standard		
4	3003	118.00	Returning	Standard		
5	3004	41.20	Returning	Express		
6	3005	40.00	New	Express		
7	3006	27.90	New	Standard		
8	3007	64.30	Returning	Standard		
9	3008	99.90	New	Standard		
10	3009	15.60	Returning	Express		
11	3010	46.70	New	Standard		
12	3011	103.40	Returning	Express		
13	3012	58.20	Returning	Standard		
14						
15	**Rules**	**Value**				
16	Free gift for new customers from (amount)	40.00				
17	Priority packing from (amount)	100.00				
18	Cost of one free gift	2.40				
19	Gifts to pack					
20	Cost of the gifts	0.00				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **E2:E13**, show **Yes** when the customer is **New** and the amount is at least the limit in B16, otherwise **No**. Fill E2 and copy it down.
2. In **F2:F13**, show **Priority** for Express orders or orders of at least B17, otherwise **Normal**.
3. In **B19**, count the gifts to pack. B20 then shows what they cost.

Dates in Excel: Days to Ship & Late Orders

Lesson 12 · about 19 min

> **Goal.** You calculate how many days each November order waited before it was shipped, flag the late ones against the 2-day promise and summarise the month.

The shop promises to ship within **2 days**. The November order list has an order date and a ship date for every order. Are we keeping the promise?

Excel stores a date as a **number of days** (1 Nov 2026 is 46,327); the date format only changes how it looks. That is why date maths is plain subtraction: **days to ship = ship date − order date** = =C2−B2. If the result shows as a date, change the cell format to *Number*.

Combine it with IF: =IF(D2>$B$15,"Late","On time"). Use **>** here, not >=: shipping on day 2 keeps the promise. Keep the promise (2) in its own cell so it can change.

Summarise with what you know: AVERAGE for the typical waiting time and COUNTIF for the late orders. Watch weekends: order 4005 came in on a Friday and left on Monday – three calendar days. Counting only working days needs NETWORKDAYS, a topic for *Excel Dates & Times: DATE, EOMONTH, NETWORKDAYS, Time Math & Schedules*.

In Excel

- Type dates as 2.11.2026 or 11/2/2026 depending on your region; Excel turns them into date numbers.
- **Ctrl + ;** enters today's date as a fixed value.

	A	B	C	D	E
1	**Order**	**Ordered**	**Shipped**	**Days to ship**	**Status**
2	4001	2026-11-02	2026-11-03		
3	4002	2026-11-02	2026-11-05		
4	4003	2026-11-03	2026-11-04		
5	4004	2026-11-04	2026-11-06		
6	4005	2026-11-06	2026-11-09		
7	4006	2026-11-09	2026-11-10		
8	4007	2026-11-11	2026-11-12		
9	4008	2026-11-13	2026-11-17		
10	4009	2026-11-16	2026-11-17		
11	4010	2026-11-18	2026-11-20		
12	4011	2026-11-20	2026-11-23		
13	4012	2026-11-24	2026-11-25		
14					
15	Promised days to ship	2			
16					
17	Average days to ship				
18	Late orders				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D13**, calculate the days to ship: ship date − order date. Fill D2 and copy it down.
2. In **E2:E13**, show **Late** when the days to ship are more than the promise in B15, otherwise **On time**.
3. In **B17**, calculate the average days to ship.
4. In **B18**, count the late orders.

Text Formulas: Clean Product Names and Build SKU Codes

Lesson 13 · about 19 min

> **Goal.** You clean up a supplier's messy product names, build stock codes (SKUs) from the category and the ID, and check which name is too long for the marketplace.

A new supplier sends ten products for the shop, typed in a hurry: extra spaces, CAPITALS, lower case. Before they go online they need clean names and a stock code (**SKU**) such as *PAP-101*.

TRIM removes spaces at the start and end and turns double spaces into single ones. **PROPER** capitalises the first letter of every word. Nested, they clean a name in one go: =PROPER(TRIM(B2)) turns " notebook a5 dotted" into *Notebook A5 Dotted*. Excel works from the inside out: first TRIM, then PROPER.

LEFT(text, n) takes the first n characters, **UPPER** makes them capitals, and **&** joins pieces of text: =UPPER(LEFT(C2,3))&"-"&A2 gives *PAP-101*. The hyphen is text, so it goes in quotes; numbers like the ID are joined as they are.

LEN counts characters, spaces included – useful when a marketplace allows only 25 characters per name. Typical mistakes: PROPER without TRIM (the double spaces stay and look like typos), or forgetting the quotes around "-".

	A	B	C	D	E	F
1	**ID**	**Name from the supplier**	**Category**	**Clean name**	**SKU**	**Length**
2	101	notebook a5 dotted	Paper			
3	102	GEL PENS 5 PACK	PENS			
4	103	planner 2027 weekly	planners			
5	104	sticky notes yellow	Paper			
6	105	washi TAPE set	Gifts			
7	106	fountain pen blue	PENS			
8	107	desk organiser bamboo with drawer	Gifts			
9	108	highlighter set pastel	PENS			
10	109	sketchbook a4	Paper			
11	110	letter tray black	Gifts			
12						
13	Marketplace limit for names (characters)	25				
14	Name that is too long:					

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D11**, clean each supplier name with PROPER and TRIM. Fill D2 and copy it down.

2. In **E2:E11**, build the SKU: the first three letters of the category in capitals, a hyphen and the ID (e.g. PAP-101).
3. In **F2:F11**, count the characters of each **clean** name with LEN.
4. Which clean name is **longer than the limit** in B13? Type it in **B14**.

Setting Prices: Markup, .90 Endings & Margin

Lesson 14 · about 19 min

> **Goal.** You price ten new products from their cost with a markup, turn every price into a friendly .90 ending, calculate the margin and colour the prices that miss the target.

Ten new products arrive for the autumn range. The owner's rule: **double the cost** (a markup of 100 %), then round to a price that ends in **.90**, like 14.90 or 3.90. The question is whether every product still earns the target margin of 50 %.

Markup is added to the cost: price = cost × (1 + markup) = 7.35 × 2 = 14.70. **Margin** is measured on the price: (price − cost) ÷ price. A 100 % markup gives a 50 % margin – markup and margin are different numbers, and mixing them up is a classic pricing mistake.

To get a .90 ending, round **up** to the next whole number and subtract 0.10: =ROUNDUP(C2,0)−0.1 turns 14.70 into **14.90**. **ROUND** would round 2.40 down to 2 and give 1.90 – below cost-plus. ROUNDUP(x,0) always goes up to the next whole number.

Watch the edge: when the price before rounding is already a whole number or ends above .90, the .90 price is slightly **lower** – 18.00 becomes 17.90 and the margin drops under 50 %. Conditional formatting with *Less than* the target makes those products jump out.

	A	B	C	D	E
1	**Product**	**Cost from supplier**	**Price before rounding**	**Shop price (.90)**	**Margin**
2	Desk organiser	7.35			
3	Highlighter set	2.20			
4	Notebook B5 grid	4.48			
5	Pencil case	5.10			
6	Letter tray	9.00			
7	Gel pen refills	1.85			
8	Weekly planner	6.65			
9	Sketchbook A4	5.97			
10	Mini stapler	3.40			
11	Bookmark set	1.20			
12					
13	Markup on cost	100%			
14	Target margin	50%			

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **C2:C11**, calculate the price before rounding: cost × (1 + markup in B13). Fill C2 and copy it down.
2. In **D2:D11**, turn each price into a .90 price: round **up** to a whole number and subtract 0.10.
3. In **E2:E11**, calculate the margin on the shop price: (shop price − cost) ÷ shop price.
4. Colour every margin **below 50 %** in **E2:E11** light red (rule *Less than* 0.5).

An Error-Proof Order Form: IFERROR & Data Validation

Lesson 15 · about 19 min

> **Goal.** You make the order form survive typos: lookups that say "Check code" instead of #N/A, prices that fall back to 0, a count of lines to check and a validation rule for the quantities.

Customers phone in orders and staff type the codes. Two typos – *GP5* and *PL-72* – turn the order form from the XLOOKUP lesson into a sea of **#N/A**, and the order total becomes #N/A too. One quantity of **120** was meant to be 12.

IFERROR(formula, value if error) returns the result of the formula, or your own value if it fails: =IFERROR(XLOOKUP(A12,$A$2:$A$9,$B$2:$B$9),"Check code"). For the price, fall back to **0**, so the line total and the order total keep working.

Lookups ignore upper/lower case: *wt-set* finds WT-SET. A missing hyphen does not – GP5 is a different text from GP-5. Count the problem lines with COUNTIF, so nobody ships an incomplete order.

IFERROR hides **every** error, also a wrong range, so use it only around the formula you understand. **Data validation** stops bad entries at the door: allow a *whole number between 1 and 50* in the quantity column, and the 120 is marked at once.

In Excel

- Data validation: select D12:D17, **Data > Data Validation**, Allow: Whole number, between 1 and 50.
- **Data > Data Validation > Circle Invalid Data** marks entries that were typed before the rule existed.

	A	B	C	D	E
1	**Code**	**Product**	**Price**		
2	NB-A5	Notebook A5	12.50		
3	GP-5	Gel pens (5-pack)	6.90		
4	PL-27	Planner 2027	24.00		
5	SN-100	Sticky notes	3.80		
6	WT-SET	Washi tape set	9.50		
7	FP-01	Fountain pen	39.00		
8	DO-BB	Desk organiser	14.90		
9	HL-6	Highlighter set	4.90		
10					
11	**Code**	**Product**	**Price**	**Qty**	**Line total**
12	PL-27			2	0.00
13	GP5			5	0.00
14	wt-set			1	0.00
15	HL-6			3	0.00
16	PL-72			1	0.00
17	NB-A5			120	0.00
18	**Order total**				**0.00**
19					
20	Lines to check:				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **B12:B17**, look up the product name and show **Check code** when the code is not found. Fill B12 and copy it down.
2. In **C12:C17**, look up the price with IFERROR so that an unknown code gives **0**. The order total in E18 then works again.
3. In **B20**, count the order lines whose code must be checked.
4. Add **data validation** to the quantities **D12:D17**: allow only **whole numbers between 1 and 50**. The 120 gets marked as invalid.

Repeat Customers: COUNTIF per Row, Duplicates & Revenue Share

Lesson 16 · about 19 min

> **Goal.** You find out which orders come from customers who buy again, label them, calculate how much of the revenue repeat customers bring and highlight the repeated customer IDs.

Twenty orders, but how many customers come back? Repeat customers are cheap to keep and worth knowing about. The order list only has a **customer ID** per order, which is all you need (and keeps personal data out of the analysis).

COUNTIF with a cell as the condition counts how often this row's customer appears in the whole list: =COUNTIF($B$2:$B$21,B2). Customer C-214 has **4** orders, so each of her four rows shows 4. The range is locked, the condition moves with the row.

With IF the count becomes a label: =IF(D2>1,"Repeat","One-off"). Then **SUMIF ÷ SUM** gives the share of revenue from repeat customers: =SUMIF(E2:E21,"Repeat",C2:C21)/C23.

The built-in conditional format **Duplicate values** colours every ID that appears more than once – a quick visual check of the same logic. Typical mistake: forgetting the $ in the COUNTIF range, so the range shrinks as you copy down and later rows count too few orders.

	A	B	C	D	E
1	**Order**	**Customer ID**	**Amount**	**Orders by this customer**	**Type**
2	5001	C-214	42.50		
3	5002	C-187	18.90		
4	5003	C-305	64.00		
5	5004	C-214	37.20		
6	5005	C-422	25.60		
7	5006	C-187	51.30		
8	5007	C-519	29.90		
9	5008	C-214	58.40		
10	5009	C-633	12.80		
11	5010	C-305	47.10		
12	5011	C-748	33.30		
13	5012	C-187	22.70		
14	5013	C-851	71.60		
15	5014	C-422	19.40		
16	5015	C-962	26.00		
17	5016	C-214	66.20		
18	5017	C-305	39.80		
19	5018	C-1073	15.50		
20	5019	C-519	44.90		
21	5020	C-1184	28.10		
22					
23	Total revenue		755.20		
24	Share of revenue from repeat customers				

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **D2:D21**, count how many orders the customer of each row has placed. Fill D2 and copy it down.
2. In **E2:E21**, label each order **Repeat** if the customer has more than one order, otherwise **One-off**.
3. In **C24**, calculate the share of revenue that comes from repeat orders.
4. Highlight every customer ID in **B2:B21** that appears more than once with the rule **Duplicate values** (blue fill).

Charts for Parts of a Whole: Pie and Stacked Columns

Lesson 17 · about 16 min

> **Goal.** You calculate each category's share of the half-year revenue, show it as a pie chart with labels, and show how the website and the marketplace add up month by month in a stacked column chart.

Lesson 7 used columns to compare and lines to show a trend. Two more questions come up in every shop report: **how is the total split?** and **what is each month made of?**

A **pie** (or doughnut) shows the parts of **one** whole: four categories that add up to the half-year revenue. Keep it to a few slices, turn on **data labels** and never include the Total row – it would become a slice as big as all others together. Shares: =B2/$B$6.

A **stacked column** chart puts the parts on top of each other: each column is the month's total, the two colours show Website and Marketplace. You see the total and the mix at the same time; the marketplace part grows towards Christmas.

Pick the chart by the question: shares of one total → pie; parts over time → stacked columns; comparing a few values → columns; trend → line.

	A	B	C
1	**Category**	**Revenue H2**	**Share**
2	Paper	31,450.00	
3	Pens	19,870.00	
4	Planners	27,300.00	
5	Gifts	12,200.00	
6	**Total**	**90,820.00**	
7			
8	**Month**	**Website**	**Marketplace**
9	Jul 2026	8,940.00	3,540.00
10	Aug 2026	8,410.00	3,550.00
11	Sep 2026	9,580.00	4,140.00
12	Oct 2026	9,870.00	4,440.00
13	Nov 2026	11,200.00	5,750.00
14	Dec 2026	13,620.00	7,780.00

Shaded cells are your work area – fill them in, then compare with the Appendix: Solutions at the end of the book.

Your tasks

Try it on your computer: open a blank spreadsheet, type the numbers from the worksheet above into the same cells (A1, B1 …), then work on the shaded cells. When you are done, compare with the solutions in **Appendix: Solutions** at the end of this book and correct your sheet.

1. In **C2:C5**, calculate each category's share of the total in B6. Fill C2 and copy it down.
2. Insert a **pie chart** of the revenue by category (`A1:B5`, **without** the Total row) with **data labels** and a title that contains *category* or *revenue*.
3. Insert a **stacked column chart** of the months and both channels (`A8:C14`) with a title that contains *channel*.