



MrExcel
LIBRARY

FORMULAS AND FUNCTIONS

Microsoft® Excel® 2013

MAKE FINANCIAL DECISIONS
MODEL YOUR BUSINESS
TRACK TRENDS
TROUBLESHOOT FORMULAS
MAKE FORECASTS
SOLVE COMPLEX PROBLEMS
BUILD SPREADSHEETS FASTER
IMPROVE WORKBOOK RELIABILITY



Excel® 2013 Formulas and Functions

Paul McFedries

que®

800 East 96th Street,
Indianapolis, Indiana
46240
USA

Contents at a Glance

Introduction	
Part I Mastering Excel Ranges and Formulas	
1 Getting the Most Out of Ranges.....	5
2 Using Range Names.....	37
3 Building Basic Formulas.....	53
4 Creating Advanced Formulas.....	87
5 Troubleshooting Formulas.....	111
Part II Harnessing the Power of Functions	
6 Understanding Functions.....	129
7 Working with Text Functions.....	139
8 Working with Logical and Information Functions.....	163
9 Working with Lookup Functions.....	191
10 Working with Date and Time Functions.....	209
11 Working with Math Functions.....	237
12 Working with Statistical Functions.....	257
Part III Building Business Models	
13 Analyzing Data with Tables.....	289
14 Analyzing Data with PivotTables.....	321
15 Using Excel's Business-Modeling Tools.....	345
16 Using Regression to Track Trends and Make Forecasts.....	367
17 Solving Complex Problems with Solver.....	405
Part IV Building Financial Formulas	
18 Building Loan Formulas.....	427
19 Building Investment Formulas.....	445
20 Building Discount Formulas.....	459
Index.....	479

Formulas and Functions: Microsoft Excel 2010, Portable Documents: Microsoft Excel 2010

Table of Contents

Contents

Introduction

Whats in the Book

This Books Special Features

Part I: Mastering Excel Ranges and Formulas

1 Getting the Most Out of Ranges

Advanced Range-Selection Techniques

Data Entry in a Range

Filling a Range

Creating a Series

Advanced Range Copying

Clearing a Range

Applying Conditional Formatting to a Range

From Here

2 Using Range Names

Defining a Range Name

Working with Range Names

From Here

3 Building Basic Formulas

Understanding Formula Basics

Understanding Operator Precedence

Controlling Worksheet Calculation

Table of Contents

Copying and Moving Formulas
Displaying Worksheet Formulas
Converting a Formula to a Value
Working with Range Names in Formulas
Working with Links in Formulas
Formatting Numbers, Dates, and Times
From Here

4 Creating Advanced Formulas

Working with Arrays
Using Iteration and Circular References
Consolidating Multisheet Data
Applying Data-Validation Rules to Cells
Using Dialog Box Controls on a Worksheet
From Here

5 Troubleshooting Formulas

Understanding Excel's Error Values
Case Study: Avoiding #NAME? Errors When Deleting Range Names
Fixing Other Formula Errors
Handling Formula Errors with IFERROR()
Using the Formula Error Checker
Auditing a Worksheet
From Here

Part II: Harnessing the Power of Functions

6 Understanding Functions

About Excel's Functions
The Structure of a Function
Typing a Function into a Formula
Using the Insert Function Feature
Loading the Analysis ToolPak
From Here

Table of Contents

7 Working with Text Functions

Excels Text Functions

Working with Characters and Codes

Converting Text

Formatting Text

Manipulating Text

Removing Unwanted Characters from a String

Extracting a Substring

Case Study: Generating Account Numbers

Searching for Substrings

Substituting One Substring for Another

Case Study: Generating Account Numbers, Part II

From Here

8 Working with Logical and Information Functions

Adding Intelligence with Logical Functions

Case Study: Building an Accounts Receivable Aging Worksheet

Getting Data with Information Functions

From Here

9 Working with Lookup Functions

Understanding Lookup Tables

The CHOOSE() Function

Looking Up Values in Tables

From Here

10 Working with Date and Time Functions

How Excel Deals with Dates and Times

Using Excels Date Functions

Using Excels Time Functions

Case Study: Building an Employee Time Sheet

From Here

11 Working with Math Functions

Table of Contents

Understanding Excels Rounding Functions

Case Study: Rounding Billable Time

Summing Values

The MOD() Function

Generating Random Numbers

From Here

12 Working with Statistical Functions

Understanding Descriptive Statistics

Counting Items with the COUNT() Function

Calculating Averages

Calculating Extreme Values

Calculating Measures of Variation

Working with Frequency Distributions

Using the Analysis ToolPak Statistical Tools

From Here

Part III: Building Business Models

13 Analyzing Data with Tables

Converting a Range to a Table

Basic Table Operations

Sorting a Table

Filtering Table Data

Referencing Tables in Formulas

Excels Table Functions

Case Study: Applying Statistical Table Functions to a Defects Database

From Here

14 Analyzing Data with PivotTables

What Are PivotTables?

Building PivotTables

Working with PivotTable Subtotals

Changing the Data Field Summary Calculation

Table of Contents

Creating Custom PivotTable Calculations

Case Study: Using PivotTable Results in a Worksheet Formula

From Here

15 Using Excels Business-Modeling Tools

Using What-If Analysis

Working with Goal Seek

Working with Scenarios

From Here

16 Using Regression to Track Trends and Make Forecasts

Choosing a Regression Method

Using Simple Regression on Linear Data

Case Study: Trend Analysis and Forecasting for a Seasonal Sales Model

Using Simple Regression on Nonlinear Data

Using Multiple Regression Analysis

From Here

17 Solving Complex Problems with Solver

Some Background on Solver

Loading Solver

Using Solver

Adding Constraints

Saving a Solution as a Scenario

Setting Other Solver Options

Making Sense of Solvers Messages

Case Study: Solving the Transportation Problem

Displaying Solvers Reports

From Here

Part IV: Building Financial Formulas

18 Building Loan Formulas

Understanding the Time Value of Money

Calculating the Loan Payment

Table of Contents

Building a Loan Amortization Schedule
Calculating the Term of the Loan
Calculating the Interest Rate Required for a Loan
Calculating How Much You Can Borrow
Case Study: Working with Mortgages
From Here

19 Building Investment Formulas

Working with Interest Rates
Calculating the Future Value
Working Toward an Investment Goal
Case Study: Building an Investment Schedule
From Here

20 Building Discount Formulas

Calculating the Present Value
Discounting Cash Flows
Calculating the Payback Period
Calculating the Internal Rate of Return
Case Study: Publishing a Book
From Here

Index