Excel 2007

▼ SKILLS REVIEW (CONTINUED)

g. Enter your name in the worksheet footer, save your work, compare your screen to Figure E-25, then print the worksheet.

8. Calculate payments with the PMT function.

- a. Make the Loan sheet active.
- **b.** In cell B9, determine the monthly payment using the loan information shown: Use the Function Arguments dialog box to enter the formula

=PMT(B5/12,B6,-B4).

- c. In cell B10, enter the formula =B9*B6.
- **d.** In cell B11, enter the formula **=B10-B4**, then compare your screen to Figure E-26.
- e. Enter your name in the worksheet footer, save the workbook, then print the worksheet.

9 Healy 10 Gosselin 11 Rameicz

12 Martin

f. Close the workbook, then exit Excel.



lacktriangleright independent challenge 1 20^{-2}

As the accounting manager of Travel Well, a travel insurance company, you are reviewing the accounts payable information for your advertising accounts and prioritizing the overdue invoices for your collections service. You will analyze the invoices and use logical functions to emphasize priority accounts.

- **a.** Start Excel, open the file EX E-4.xlsx from the drive and folder where you store your Data Files, then save it as **Ad Accounts**.
- **b.** Name the range B7:B13 **invoice_date** and give the name a scope of the accounts payable worksheet.
- c. Name the cell B4 current_date and give the name a scope of the accounts payable worksheet.
- **d.** Enter a formula using the named range invoice_date in cell E7 that calculates the invoice due date by adding 30 to the invoice date.
- **e.** Copy the formula in cell E7 to the range E8:E13.
- **f.** In cell F7, enter a formula using the named range invoice_date and the named cell current_date that calculates the invoice age by subtracting the invoice date from the current date.
- **g.** Copy the formula in cell F7 to the range F8:F13.
- **h.** In cell G7, enter an IF function that calculates the number of days an invoice is overdue, assuming that an invoice must be paid in 30 days. (*Hint*: The Logical_test should check to see if the age of the invoice is greater than 30, the Value_if_true should calculate the current date minus the invoice due date, and the Value_if_false should be 0). Copy the IF function into the range G8:G13.
- i. In cell H7, enter an AND function to prioritize the overdue invoices that are more than \$1000 for collection services. (*Hint*: The Logical1 condition should check to see if the number of days overdue is more than 0 and the Logical2 condition should check if the amount is more than 1000). Copy the AND function into the range H8:H13.
- i. Enter your name in the worksheet footer, then save, preview, and print the worksheet.
- k. Close the workbook, then exit Excel.

Advanced Challenge Exercise NO



- Use the "Refers to:" text box in the Name Manager dialog box to verify that the names in the worksheet refer to the correct ranges.
- Use the filter in the Name Manager dialog box to verify that your names are scoped to the worksheet and not the
- Use the filter in the Name Manager dialog box to verify that your names are defined, free of errors, and not part of a table.



Accounting Department

Merit Pay



▼ INDEPENDENT CHALLENGE 2*

You are an auditor with a certified public accounting firm. Goals, a manufacturer of ice skating products based in Quebec, has contacted you to audit its first-quarter sales records. The management at Goals is considering opening a branch in Great Britain and needs its sales records audited to prepare the business plan. Specifically, they want to show what percent of annual sales each category represents. You will use a formula on a summary worksheet to summarize the sales for January, February, and March and to calculate the overall first-quarter percentage of the sales categories.

- a. Start Excel, open the file EX E-5.xlsx from the drive and folder where you store your Data Files, then save it as Goals Sales.
- **b.** In cell B10 of the Jan, Feb, and Mar sheets, enter the formulas to calculate the sales totals for the month.
- c. For each month, in cell C5, create a formula calculating the percent of sales for the Sticks sales category. Use a function to display "ERROR" if there is a mistake in the formula. Verify that the percent appears with two decimal places. Copy this formula as necessary to complete the % of Sales data for all sales categories on all sheets. If any cells display "ERROR", fix the formulas in those cells.
- **d.** In column B of the Summary sheet, use formulas to total the sales categories for the Jan, Feb, and Mar worksheets.
- e. Locate the first-quarter sales total in cell B10 of the Summary sheet. Calculate the percent of each sales category on the Summary sheet. Use a function to display "ERROR" if there is a mistake in the formula. Copy this formula as necessary. If any cells display "ERROR", fix the formulas in those cells.
- f. Enter your name in the Summary worksheet footer, then save, preview, and print the worksheet.
- g. On the Products sheet, separate the product list in cell A1 into separate columns of text data. (Hint: The products are delimited with commas.) Widen the columns as necessary. Use the second row to display the products with the first letter of each word in uppercase, as shown in Figure E-27.
- h Enter your name in the Products work- FIGURE E-27 sheet footer, then save, preview, and print the worksheet.
- i. Close the workbook, then exit Excel.

t bags
nt Bags

▼ INDEPENDENT CHALLENGE 3 **

As the owner of Best Dressed, a clothing boutique with a growing clientele, you are planning to expand your business into a neighboring city. Because you will have to purchase additional inventory and renovate your new rental space, you decide to take out a \$20,000 loan to finance your expansion expenses. You check three loan sources: the Small Business Administration (SBA), your local bank, and a consortium of investors. The SBA will lend you the money at 7.5% interest, but you have to pay it off in three years. The local bank offers you the loan at 8.25% interest over four years. The consortium offers you a 7% loan. but they require you to pay it back in two years. To analyze all three loan options, you decide to build a loan summary worksheet. Using the loan terms provided, build a worksheet summarizing your options.

- a. Start Excel, open a new workbook, then save it as Dress Shop Loan.
- b. Using Figure E-28 as a guide, enter labels and worksheef data for the three loan sources. (Hint: The Aspect theme is used with Orange Accent 1 as the fill color in the first two rows and Orange, Accent 1, Darker 25% as the text color in the calculation area.)
- c. Enter the monthly payment formula for your first loan source (making sure to show the payment as a positive amount), copy the formula as appropriate, then name the range containing the monthly payment formulas

Monthly Payment with a scope of the workbook.

FIGURE E-28

Mary Cold Street	В	C	D D	E	The state of the state of	G
			Best Dre			2.8
-		***************************************	Loan Op	CIOIIS		di salahan salah
Loan Source	Loan Amount	Interest Rate	# Payments	Monthly Payn	nent Total Payment	s Total Interes
SBA	20 000	7 50%	35			
Bank	20 000	8 25%	48			
	20 000	7 00%	24			

▼ INDEPENDENT CHALLENGE 3 (CONTINUED) ★

- **d.** Name the cell range containing the number of payments **Number_Payments** with the scope of the workbook.
- **e.** Enter the formula for total payments for your first loan source using the named ranges Monthly_Payment and Number_Payments, then copy the formula as necessary.
- **f.** Name the cell range containing the formulas for Total payments **Total_Payments**. Name the cell range containing the loan amounts **Loan_Amount**.
- **g.** Enter the formula for total interest for your first loan source using the named ranges Total_Payments and Loan_Amount, then copy the formula as necessary.
- **h.** Format the worksheet using formatting appropriate to the worksheet purpose, then enter your name in the worksheet footer.
- i. Save, preview, and print the worksheet in landscape orientation, on a single page.

Advanced Challenge Exercise



- Turn on the print gridlines option for the worksheet.
- Turn on the printing of row and column headings.
- Print the worksheet formulas with the worksheet gridlines and headings on one page.
- Display the worksheet values.
- i. Close the workbook then exit Excel.

▼ REAL LIFE INDEPENDENT CHALLENGE

You decide to create a weekly log of your daily aerobic exercise. As part of this log, you record your aerobic activity along with the number of minutes spent working out. If you do more than one activity in a day, for example, if you bike and walk, record each as a separate event. Along with each activity, you record the location where you exercise. For example, you may walk in the gym or outdoors. You will use the log to analyze the amount of time that you spend on each type of exercise.

- **a.** Start Excel, open the file EX E-6.xlsx from the drive and folder where you store your Data Files, then save it as **Workout**.
- **b.** Use the structure of the worksheet to record your aerobic exercise activities. Change the data in columns A, B, C, D, and F to reflect your activities, locations, and times. If you do not have any data to enter, use the provided worksheet data.
- c. Use a SUMIF function in the column G cells to calculate the total minutes spent on each activity.
- d. Enter an AVERAGEIF function in the column H cells to average the number of minutes spent on each activity.
- e. Enter a COUNTIF function in the column I cells to calculate the number of sessions spent on each activity.

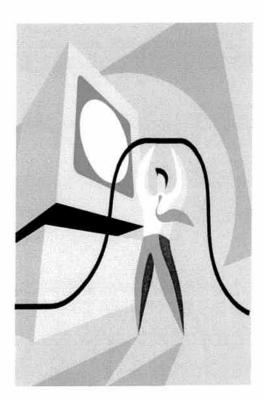
Advanced Challenge Exercise



- Enter one of your activities with a specific location, such as Walk Outdoors, in a column F cell, then enter the SUMIFS function in the adjacent column G cell that calculates the total number of minutes spent on that activity in the specific location (such as walking ...outdoors).
- Enter the AVERAGEIFS function in the corresponding column H cell that calculates the average number of minutes spent on the activity in the specified location.
- Enter the COUNTIFS function in the corresponding column I cell that calculates the number of days spent on the activity in the specific location.
- f. Enter your name in the worksheet footer, then save, preview, and print the worksheet.
- g. Close the workbook, then exit Excel.

Assignment 1

This week "work through" Excel Unit E. To "work through" means reading and performing all hands-on exercises. The exercises give detailed step-by-step instructions with corresponding screen shot figures of the Excel interface tabs, menus, toolbars, dialog boxes, and correct output. You should perform all of these to learn how to complete each skill.



Objectives

Students will have mastered the material in Excel Unit E when they can:

- Format data using text functions
- Sum a data range based on conditions
- Consolidate data using a formula
- Check formulas for errors
- Construct formulas using named ranges
- Build a logical formula with the IF function
- Build a logical formula with the AND function
- Calculate payments with the PMT function

Unit Study Tips

Commonly used text functions include UPPER, LOWER, and SUBSTITUTE. The UPPER function converts text to all uppercase letters, the LOWER function converts text to all lowercase letters, and SUBSTITUTE replaces text in a text string. For example, if cell A1 contains the text string Today is Wednesday, then =LOWER(A1) would produce today is wednesday, =UPPER(A1) would produce TODAY IS WEDNESDAY, and =SUBSTITUTE(A1, "Wednesday", "Tuesday") would result in Today is Tuesday. If you want to copy and paste data formatted using text functions, you need to select Values Only from the Paste Options dropdown list to paste the cell values rather than the text formulas.

You can sum, count, and average ranges with criteria using the functions SUMIF, COUNTIF, and AVERAGEIF. A single criteria is a condition that must be satisfied in the range.

You can consolidate data using named ranges, as well as unnamed ranges. For example, you might have entered team sales figures using the names team1, team2, and team3 on different sheets that you want to consolidate on one summary sheet. As you enter the summary formula you can click the Formulas tab, click the Use in Formula button in the Defined Names group, and select the range name.

You can also use a summary worksheet to consolidate yearly sales figures. Place data for each quarter on a separate sheet. On a summary sheet, use a row for each quarter that references each quarter's sales. Then sum the quarterly information to display total yearly sales.

A cell with a circular reference contains a formula that refers to its own cell location. If you accidentally enter a formula with a circular reference, a warning box opens, alerting you to the problem. Click OK to open a Help window explaining how to find the circular reference. In simple formulas, a circular reference is easy to spot. To correct it, edit the formula to remove any reference to the cell where the formula is located.

Because names can not contain spaces, underscores are often used between words to replace spaces, making names with multiple words easier to read.

Named cells and ranges can be used as a navigational tool in a worksheet by selecting the name in the Name box. The named cell or range becomes active.

You can use the Name Manager to create, delete, and edit names in a workbook. Click the Name Manager button in the Defined Names group on the Formulas tab to open the Name Manager dialog box, as shown in Figure E-13. Click the New button to create a new named cell or range, click Edit to change a highlighted cell name, and click Delete to remove a highlighted name. Click Filter to see options for displaying specific criteria for displaying names.

Be sure that you understand absolute references, because when named ranges are used in formulas, the names become absolute cell references by default.

An IF Function is a logical formula that makes calculations based on a stated condition that you create. The three parts of an IF Function are the condition, an action to take if the condition is true, and an action to take if the condition is false.

The AND function evaluates multiple conditions and returns (or displays) a value of TRUE only if all of the conditions are true. A value of FALSE is returned if any of the conditions is not true.

The OR logical function has the same syntax as the AND function, but rather than returning TRUE if every argument is true, the OR function will return TRUE if any of its arguments are TRUE. It will only return FALSE if all of its arguments

are FALSE. The NOT logical function reverses the value of its argument. For example NOT(TRUE) reverses its argument of TRUE and returns FALSE. This can be used in a worksheet to ensure that a cell is not equal to a particular value. See Table E-3 for examples of the AND, OR, and NOT functions.

The PMT function is a commonly used financial function that calculates the periodic payment amount required to pay back a loan. The steps for entering a PMT function are: Start in the Formulas tab, Click the Financial button, Enter a cell reference in the Rate text box and divide by 12 (for monthly payments), Click in the Nper text box and enter the number of payments (e.g., 60 would equal 5 years), Click in the Pv text box and click on the cell that displays the present value of the loan amount. Note that the last two PMT function arguments, fv and type, are optional and require additional knowledge of financial concepts that many students do not have. Be consistent about the units you use for rate and nper. If you express nper as the number of monthly payments, then express the interest rate as a monthly rate.

Graded Exercises to be Submitted

- Independent Challenge 1, Ad Accounts, page Excel 125.
- Independent Challenge 2, Goals Sales, page Excel 126.
- ➤ Independent Challenge 3, Dress Shop Loan, pages Excel 126-127.

Turn in each completed exercise to me using the assignment "delivery boxes" on the Moodle course site in the Week 1 section.

For Assignment 1, you will find these 3 "delivery boxes" in the Week 1 section:

- ✓ Ad Accounts
- √ Goals Sales
- ✓ Dress Shop Loan

A solution printout (in PDF format) is provided for each of the above files. Compare your output to the solution printout to gauge correctness. (Of course, the printout shows formula output but not correct formulas that produce the output.)

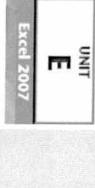
Note that turning in assignment files to be graded by email attachment is not acceptable. Use of the Moodle assignment "delivery boxes" enables recording of grades and feedback on the Moodle course website.

Exercises submitted by midnight Thursday will be graded for feedback purposes by midnight Friday. Errors may be corrected and exercises resubmitted by midnight Saturday for full credit.

These problems are due according to the schedule given in the course syllabus, Independent Challenge 1, 2, and 3 by next Saturday evening. Note that the college requires a 20% penalty be imposed for all work submitted late in online courses.

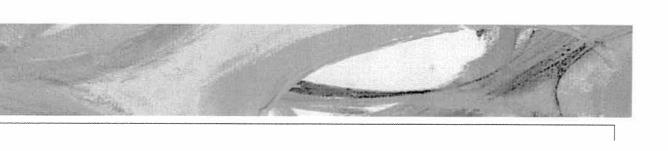
As always, contact me by email if you have any questions or problems. If you have a question about a specific Excel exercise, you may attach your Excel file to your email. If you wish me to call you, then include your phone number and a good time to call in the email.

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Analyzing Data Using Formulas





Excel 2007

Objectives

- Format data using text functions
- Sum a data range of based on conditions
- Consolidate data using a formula
- Check formulas for errors



Objectives

- ranges Construct formulas using named
- function Build a logical formula with the IF
- function Build a logical formula with the AND
- Calculate payments with the PMT Tunction



Functions Formatting Data Using Text

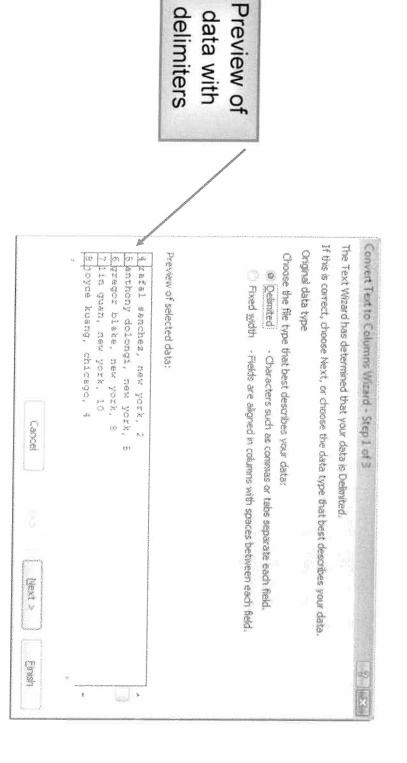


- automatically format a cell range Conversion tools and text functions
- Convert Text to Columns breaks data columns fields in one column into separate
- Data elements should be separated by a comma, or semicolon delimiter or separator, such as a space,
- string of text PROPER capitalizes first letter in a



Functions (cont.) Formatting Data Using Text







Formatting Data Using Text Functions (cont.)

TINU

- CONCATENATE function joins two or more strings into one text string.
- You must use quotation marks around



Sum a Data Range Based on Conditions

- SUMIF function
- Conditionally totals cells in a sum range that meet given criteria
- COUNTIF function
- Counts cells in a range based on a specified condition
- AVERAGEIF function
- specified condition. averages cells in a range based on a



Conditions (cont.) Sum a Data Range Based on

IN

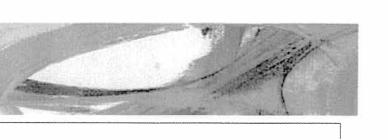
Format of SUMIF Function

SUMIF(range, criteria, [sum_range])

The range the function searches

The condition that must be satisfied in the range

The range where the cells that meet the condition will be totaled



Formula Consolidate Data Using a



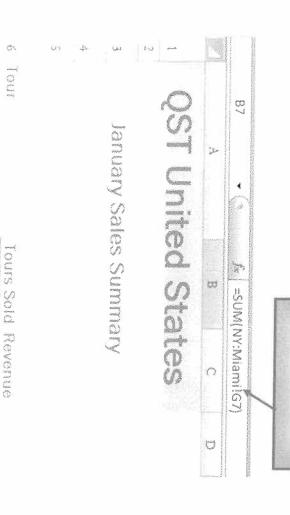
- Consolidate:
- Summarizes similar data that exists in different sheets or workbooks
- sheet. sheets on a consolidation, or summary, Use cell references to the various
- These references effectively create are called 3-D references. another dimension in the workbook and



Formula (cont.) Consolidate Data Using a

UNIT

3-D Formula

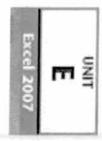


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Down Under Exodus

Old Japan

Pacific Odyssey



Check Formulas for Errors

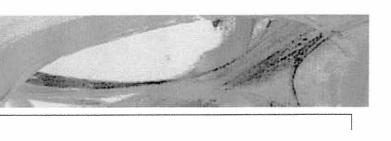
- IFERROR function
- Simplifies the error-checking process for your worksheets
- automatically generated by Excel, if Displays a message or value that you there is an error in a formula. specify, rather than the one



Checking Formulas for Errors (cont.)



- Correcting circular references
- A cell with a circular reference contains a formula that refers to its own cell location
- If you accidentally enter a formula with alerts you to the problem a circular reference, a warning box



Checking Formulas for Errors (cont.)



- Correcting circular references
- A cell with a circular reference contains a formula that refers to its own cell location
- If you accidentally enter a formula with a circular reference, a warning box alerts you to the problem

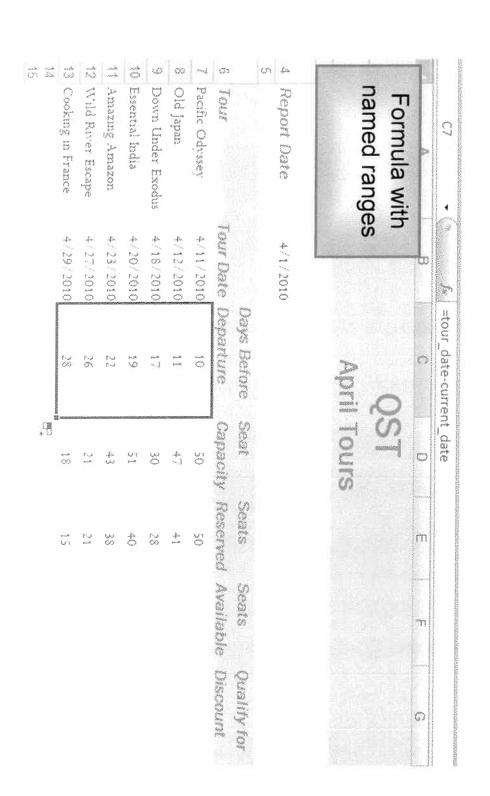


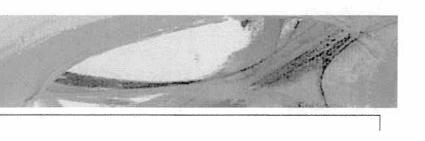
Constructing Formulas Using Named Ranges

- Assigning names to cells and ranges worksheet easier to understand can reduce errors and make the
- Names used in formulas become Names can use uppercase or absolute cell references by default
- lowercase letters as well as digits
- After a cell or range is named, you can use the name on any sheet
- The name moves with the cell or range





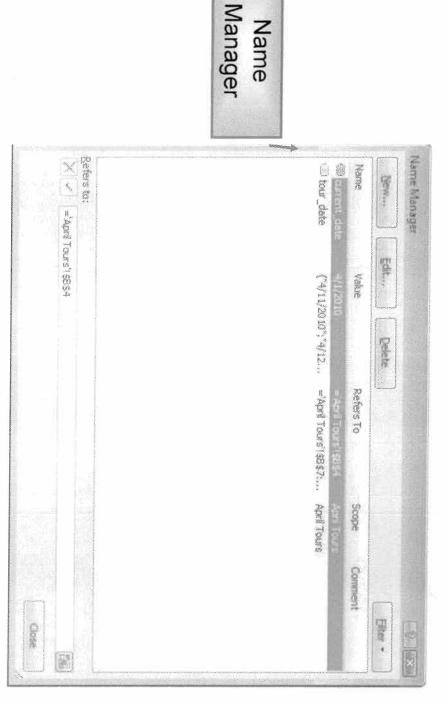




Constructing Formulas Using Named Ranges (cont.)

m §

Managing Names





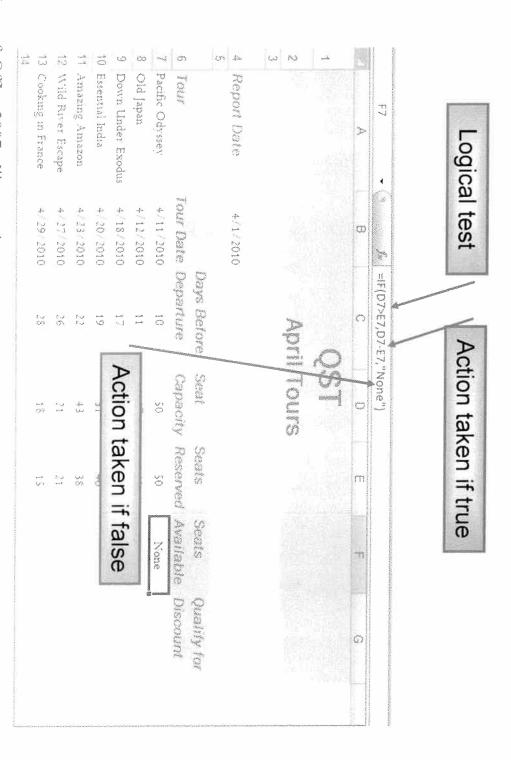
the IF Function Building a Logical Formula with

- Build a logical formula with the IF function
- A ogica formula is one that makes calculations based on stated conditions
- A condition that can be answered with a true or talse response is called a logical test
- The IF function has three parts: a condition or test is true, and an action if the condition or logical test, an action if the condition or logical logical test is false
- Use comparison operators in IF statements



UNIT







the IF Function (cont.) Building a Logical Formula with

m ş

Comparison operators

**	V	^	8 8 8
	Greater than	Less than	
\	Y		200
Not equal to	Greater than or equal to	Less than or equal to	A CO



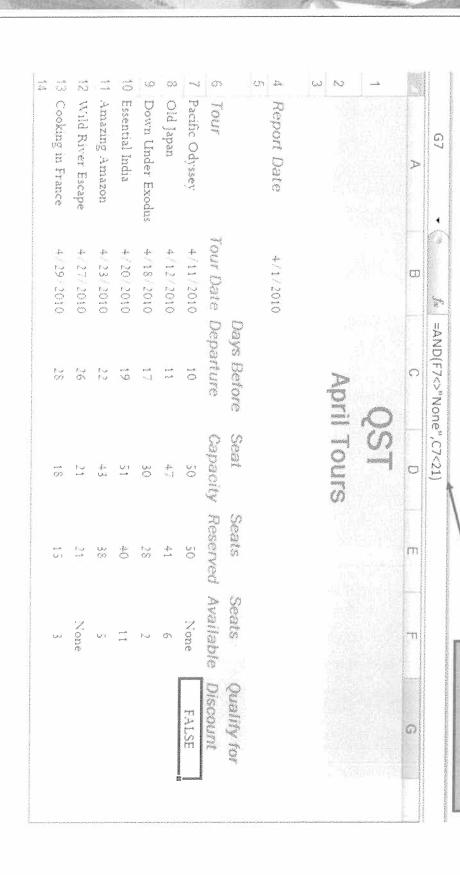
the AND function Building a logical formula with

- TRUE
- if every logical test in the formula is true.
- FALSE
- if one or more of its logical tests is false.
- include text, numbers, or cell reterences. The AND function arguments can



m §

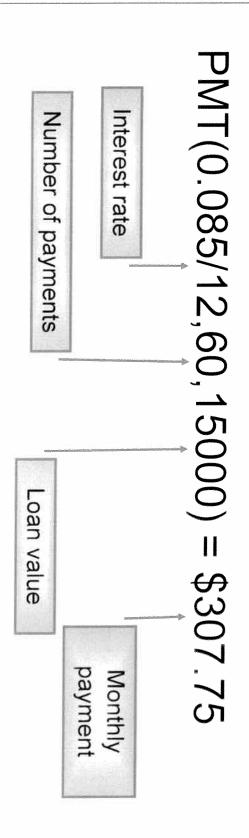
AND function





the PMT Function Calculating Payments with

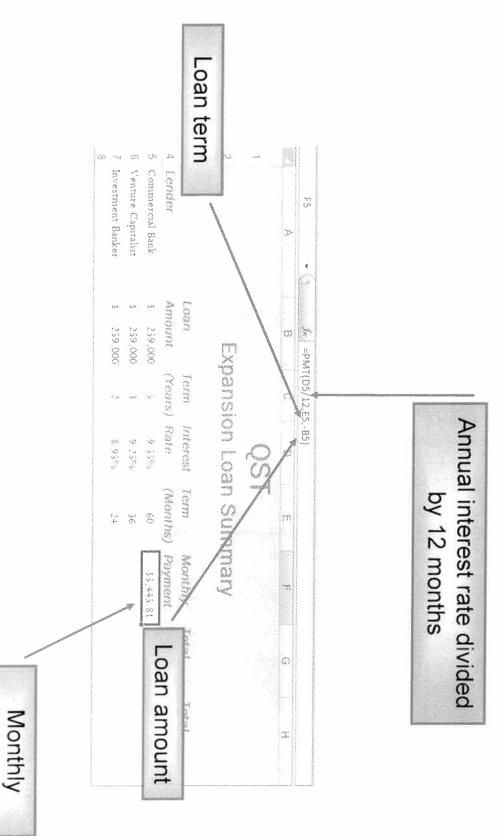
- PMT is a financial function that amount for money borrowed calculates the periodic payment
- Parts of the PMT function are: PMT(rate,nper,pv,fv,type)







UNIT



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payment



the PMT Function (cont.) Calculating Payments with

- function Calculating future value with the FV
- Use the FV (Future Value) function to payment periods given interest rate after a number of determine the amount of money a given monthly investment will amount to, at a
- Syntax: FV(rate,nper,pmt,pv,type)



Summary

- Use text functions to format data
- Check formulas for errors
- Use names in formulas
- Use dates in calculations
- Build logical formulas using IF and AND functions

9/1/2010

Resultac Character The names are defined, free of errors, and not part of a table Francher Visitable Visitable of the part of a table Visitable Visitable Visitable of the part of a table Francher Visitable of the part of a table Visitable Visitable of the part of a table Francher Age of the part of a table Visitable of the part of a table Francher Age of the part of a table Visitable of the part of a table Francher Age of the part of a table Factorial 1,367,00 9/1/10 30 O FALSE 1017 7/16/10 Europe by Rail 1,259.99 8/15/10 47 17 TRUE 2341 6/2/10 African Tours 1,569.33 7/2/10 91 61 TRUE 3922 8/7/10 See Australia 2,461.65 9/6/10 25 0 FALSE 3486 7/3/10 Family Travels 789.34 8/2/10 60 30 FALSE 7443 8/16/10 Senior Vacations 557.00 9/15/10 16	o the	The names are scoped to the	The name	to the	The names in the worksheet refer to the			
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### The names are defined, free of certors, and not part of a table ####################################	FALSE	0	27	9/4/10	1,576.88	Single Holidays		9864
The names are defined, free of errors, and not part of a table	FALSE	30	60	8/2/10	789.34	Family Travels		3486
The names are defined, free of errors, and not part of a table	FALSE	0	25	9/6/10	2,461.65	See Australia	8/7/10	3922
The names are defined, free of errors, and not part of a table	TRUE	61	91	7/2/10	1,569.33	African Tours	6/2/10	2341
The names are defined, free of errors, and not part of a table Droper Decrease Various Amount Date Busin Instance Group Dates 8/2/10 Travel Asia 1,367.00 9/1/10 30 0	TRUE	17	47	8/15/10	1,259.99	Europe by Rail	7/16/10	1017
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	en e	Vander			of a table	The names are defin errors, and not part		

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	Cell C5 for each month calculates the percent of sales for the Sticks category		The state of the s	saies percentage

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Sales Summary Goals

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Sales Summary

Your Name

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Summary

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\$2,30%	5g6'69g't	\$		Viogolal s	Sticks

Products

equipment bags	sbeq	lanaqqa	ice Skates	aticks
	sbe9	lanaqqA	Ice Skates	Sticks

