CIS100 Final Exam Review
CIS100 Final Exam Content

Chapter 8: The Web-Enabled Enterprise  (*pp 265-311*)
Chapter 14: Risks, Security, and Disaster Recovery  (*pp 473-485*)

Cumulative concepts, features and functions, plus PivotTables, PivotCharts, Charts & Graphs

All assigned course Homework and Lab Assignments

TRUE/FALSE, MULTIPLE CHOICE, FILL-THE-BLANK, MATCHING

NO SHORT ANSWER OR ESSAY!
CIS100 Cumulative Microsoft® Excel® Functions

• **Mathematical Functions**
  - INT
  - ROUND
  - SUM
  - SUMIF

• **Statistical Functions**
  - AVERAGE
  - AVERAGEIF
  - COUNT
  - COUNTIF
  - COUNTA
  - LARGE
  - MAX
  - MEDIAN
  - MIN
  - SMALL

• **Logical Functions**
  - AND
  - OR
  - NOT
  - IF

• **Date & Time Functions**
  - DATEDIF
  - TODAY
  - YEARFRAC
CIS100 Final Exam New Microsoft® Excel® Features

• PivotTables
• PivotCharts
• Charts & Graphs
Microsoft® Excel® PivotTables

PivotTable I: Get started with PivotTable reports in Excel 2007

PivotTable II: Filter PivotTable report data in Excel 2007

PivotTable III: Calculate data in PivotTable reports in Excel 2007
Microsoft® Excel® PivotCharts

About PivotChart Reports

Comparing a PivotTable report and a PivotChart report
Charts I: How to create a chart in Excel 2007
Excel Mathematical Functions

**SUM**

\[ =\text{SUM}\left(\text{number1},[\text{number2}], \ldots\right) \]

**SUMIF**

\[ =\text{SUMIF}\left(\text{range},\text{criteria},[\text{sum\_range}]\right) \]

**ROUND**

\[ =\text{ROUND}\left(\text{number},\text{num\_digits}\right) \]

**INT**

\[ =\text{INT}\left(\text{number}\right) \]
The **SUM** function

Syntax:

```
=SUM(number1, [number2], [number3], [number4], ...)
```

Arguments:

- **number1**  *Required*
  - The first item that you want to add.
- **number2, number3, number4, ...**  *Optional*
  - The remaining items that you want to add, up to a total of 255 items.
The **SUM** function

**Description:**

• Adds all the numbers that you specify as arguments.

**Remarks:**

• Each argument can be a range, a cell reference, an array, a constant, a formula, or the result from another function.
• If an argument is an array or reference, only numbers in that array or reference are counted. Empty cells, logical values, or text in the array or reference are ignored.

**Errors:**

If any arguments are error values, or if any arguments are text that cannot be translated into numbers, Excel displays an error.
The **SUM** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data</td>
<td>Formula</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-5</td>
<td>=SUM(3, 2)</td>
<td>Adds 3 and 2</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>=SUM(&quot;5&quot;, 15, TRUE)</td>
<td>Adds 5, 15 and 1, because the text values are translated into numbers, and the logical value TRUE is translated into the number 1</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>'5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>TRUE</td>
<td>=SUM(A2:A4)</td>
<td>Adds the first three numbers in column A</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>=SUM(A2:A4, 15)</td>
<td>Adds the first three numbers in column A, and 15</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>nonnumeric values in references are not translated, the values in column A are ignored</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>=SUM(A5,A6, 2)</td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
The **SUMIF** function

Syntax:

```
=SUMIF(range, criteria, [sum_range])
```

Arguments:

- **range**  Required
  - The range of cells that you want evaluated by criteria.
    - Cells in each range must be numbers or names, arrays, or references that contain numbers.
    - Blank and text values are ignored.
- **criteria**  Required
  - The criteria in the form of a number, expression, a cell reference, text, or a function that defines which cells will be added.
    - Criteria can be expressed as 32, ">32", B5, "32", "apples", or TODAY().
- **sum_range**  Optional
  - The actual cells to add, if you want to add cells other than those specified in the range argument.
    - Excel adds the cells that are specified in the range argument (the same cells to which the criteria is applied).
The **SUMIF** function

**Description:**

- Sums the values in a range that meet criteria that you specify.

**Remarks:**

- See the Microsoft® Excel® help for additional remarks.

**Errors:**

*None*
# The **SUMIF** function

<table>
<thead>
<tr>
<th></th>
<th>Property Value</th>
<th>Commission</th>
<th>Formula</th>
<th>Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
<td>=SUMIF(A2:A5,&quot;&gt;160000&quot;,B2:B5)</td>
<td>Sum of the commissions for property values over 160000</td>
<td>63000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The **ROUND** function

Syntax:

```
=ROUND(number, num_digits)
```

Arguments:

- **number**  Required
  - The number that you want to round.
- **num_digits**  Required
  - The number of digits to which you want to round the number argument.
The **ROUND** function

**Description:**

• Rounds a number to a specified number of digits.

**Remarks:**

• If num_digits is greater than 0 (zero), then number is rounded to the specified number of decimal places.
• If num_digits is 0, the number is rounded to the nearest integer.
• If num_digits is less than 0, the number is rounded to the left of the decimal point.

**Errors:**

*None*
# The **ROUND** function

The **ROUND** function rounds a number to a specified number of digits.

<table>
<thead>
<tr>
<th></th>
<th>Formula</th>
<th>Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>=ROUND(2.15, 1)</strong></td>
<td>Rounds 2.15 to one decimal place</td>
<td>2.2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>=ROUND(2.149, 1)</strong></td>
<td>Rounds 2.149 to one decimal place</td>
<td>2.1</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><strong>=ROUND(-1.475, 2)</strong></td>
<td>Rounds -1.475 to two decimal places</td>
<td>-1.48</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><strong>=ROUND(21.5, -1)</strong></td>
<td>Rounds 21.5 to one decimal place to the left of the decimal</td>
<td>20</td>
</tr>
</tbody>
</table>
The **INT** function

Syntax:

\[=\text{INT}(\text{number})\]

Arguments:

- **number**  Required
  - The real number that you want to round down to an integer.
The **INT** function

**Description:**
- Rounds a number down to the nearest integer.

**Remarks:**
*None*

**Errors:**
*None*
The INT function

=INT(8.9)
The **INT** function

`=INT(8.9)`

`=8`
The **INT** function

=INT(-8.9)
The **INT** function

\[ = \text{INT}(-8.9) \]
\[ = -9 \]
The **INT** function

\[ =A2 - \text{INT}(A2) \]
The **INT** function

<table>
<thead>
<tr>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>19.5</td>
</tr>
</tbody>
</table>

=A2-INT(A2)
=19.5-19
=0.5
Microsoft® Excel®
Statistical Functions

MAX
=MAX(number1,[number2],...)

MIN
=MIN(number1,[number2],...)

AVERAGE
=AVERAGE(number1, [number2],...)

AVERAGEIF
=AVERAGEIF(range,criteria,[average_range])

LARGE
=LARGE(array,k)

SMALL
=SMALL(array,k)

MEDIAN
=MEDIAN(number1, number2, …)
Microsoft® Excel®
Statistical Functions continued

**COUNT**

\[ =\text{COUNT}(\text{value1}, [,\text{value2}],...) \]

**COUNTA**

\[ =\text{COUNTA}(\text{value1}, [,\text{value2}],...) \]

**COUNTIF**

\[ =\text{COUNTIF}(\text{range}, \text{criteria}) \]
The **MAX** function

Syntax:

`=MAX(number1,[number2],...)`

Arguments:

- **number1, number2, ...**  Required
  - 1 to 255 numbers for which you want to find the maximum value.
The **MAX** function

**Description:**

- Returns the largest value in a set of values.

**Remarks:**

- Arguments can either be numbers or names, arrays, or references that contain numbers.
- Logical values and text representations of numbers that you type directly into the list of arguments are counted.
- If an argument is an array or reference, only numbers in that array or reference are used. Empty cells, logical values, or text in the array or reference are ignored.
- If the arguments contain no numbers, MAX returns 0 (zero).

**Errors:**

Arguments that are error values or text that cannot be translated into numbers cause errors.
# The MAX function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data</td>
<td></td>
<td>Formula</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td></td>
<td>=MAX(A2:A6)</td>
<td>Largest of the numbers in column A</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td></td>
<td>=MAX(A2:A6, 30)</td>
<td>Largest of the numbers in column A and 30</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Microsoft® Excel® Statistical Functions
The **MIN** function

Syntax:

\[ =\text{MIN}(\text{number1},[\text{number2}],...) \]

Arguments:

- **number1, number2, ...** *Required*
  - 1 to 255 numbers for which you want to find the minimum value.
The **MIN** function

**Description:**

• Returns the smallest value in a set of values.

**Remarks:**

• Arguments can either be numbers or names, arrays, or references that contain numbers.
• Logical values and text representations of numbers that you type directly into the list of arguments are counted.
• If an argument is an array or reference, only numbers in that array or reference are used. Empty cells, logical values, or text in the array or reference are ignored.
• If the arguments contain no numbers, MIN returns 0 (zero).

**Errors:**

Arguments that are error values or text that cannot be translated into numbers cause errors.
# The **MIN** function

<table>
<thead>
<tr>
<th></th>
<th>Data</th>
<th>Formula</th>
<th>Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td><strong>Formula</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>=MIN(A2:A6)</td>
<td>Smallest of the numbers in column A</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>=MIN(A2:A6,0)</td>
<td>Smallest of the numbers in column A and 0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The **AVERAGE** function

Syntax:

```
=AVERAGE(number1, [number2],...)
```

Arguments:

- **number1**  Required  
  - The first number, cell reference, or range for which you want the average.
- **number2, ...**  Optional  
  - Additional numbers, cell references or ranges for which you want the average, up to a maximum of 255.
The **AVERAGE** function

**Description:**

- Returns the average (arithmetic mean) of the arguments.

**Remarks:**

- Arguments can either be numbers or names, ranges, or cell references that contain numbers.
- Logical values and text representations of numbers that you type directly into the list of arguments are counted.
- If a range or cell reference argument contains text, logical values, or empty cells, those values are ignored; however, cells with the value zero are included.

**Errors:**

Arguments that are error values or text that cannot be translated into numbers cause errors.
The **AVERAGE** function

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td><strong>Data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td><strong>Formula</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>10</td>
<td>=AVERAGE(A2:A6)</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>7</td>
<td>=AVERAGE(A2:A6, 5)</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Microsoft® Excel® Statistical Functions
The **AVERAGEIF** function

**Syntax:**

\[=\text{AVERAGEIF}(\text{range}, \text{criteria}, [\text{average\_range}])\]

**Arguments:**

- **range** Required
  - One or more cells to average, including numbers or names, arrays, or references that contain numbers.
- **criteria** Required
  - The criteria in the form of a number, expression, cell reference, or text that defines which cells are averaged.
- **average\_range** Optional
  - The actual set of cells to average.
The **AVERAGEIF** function

Description:

- Returns the average (arithmetic mean) of all the cells in a range that meet a given criteria.

Remarks:

- If `average_range` is omitted, `range` is used.
- Cells in range that contain TRUE or FALSE are ignored.
- If a cell in `average_range` is an empty cell, AVERAGEIF ignores it.
- If a cell in criteria is empty, AVERAGEIF treats it as a 0 value.

Errors:

#DIV/0 – If range is a blank or text value.

#DIV/0 – If no cells in the range meet the criteria.
The **AV**ERAGE**IF** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Property Value</strong></td>
<td><strong>Commission</strong></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=AV**ERAGE**IF(B2:B5,"<23000")
The **AVERAGEIF** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Property Value</strong></td>
<td><strong>Commission</strong></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=``=AVERAGEIF(B2:B5,"<23000")``

=14000
The **AVERAGEIF** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Property Value</strong></td>
<td><strong>Commission</strong></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=**AVERAGEIF**(A2:A5,"<95000")
The **AV<font color="#0050A3">ERAGEI<font color="#0050A3">F** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Property Value</td>
<td>Commission</td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=**AVERAGEIF**(A2:A5,"<95000")

=#DIV/0
The **AV**ERAGEIF function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Property Value</strong></td>
<td><strong>Commission</strong></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=AV**ERAGEI**F(A2:A5,">250000",B2:B5)
The **AVERAGEIF** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Property Value</strong></td>
<td><strong>Commission</strong></td>
</tr>
<tr>
<td>2</td>
<td>100,000</td>
<td>7,000</td>
</tr>
<tr>
<td>3</td>
<td>200,000</td>
<td>14,000</td>
</tr>
<tr>
<td>4</td>
<td>300,000</td>
<td>21,000</td>
</tr>
<tr>
<td>5</td>
<td>400,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

=\text{AVERAGEIF}(A2:A5,">250000",B2:B5)
=24500
The **LARGE** function

Syntax:

\[=\text{LARGE}(\text{array},k)\]

Arguments:

- **array**  Required
  - The array or range of data for which you want to determine the k-th largest value.
- **k**  Required
  - The position (from the largest) in the array or cell range of data to return.
The **LARGE** function

**Description:**

- Returns the k-th largest value in a data set.

**Remarks:**

- If \( n \) is the number of data points in a range, then \( \text{LARGE}(\text{array},1) \) returns the largest value.
- If \( n \) is the number of data points in a range, then \( \text{LARGE}(\text{array},n) \) returns the smallest value.

**Errors:**

- \#NUM! – If array is empty
- \#NUM! – If \( k \leq 0 \)
- \#NUM! – If \( k \) is greater than the number of data points
3rd largest number in the numbers in columns A and B

=\text{LARGE}(\text{array}, k)
3rd largest number in the numbers in columns A and B

=\text{LARGE}(\text{array}, k)

=\text{LARGE}(A2:B6)
3rd largest number in the numbers in columns A and B

=\text{LARGE}(\text{array},k)
=\text{LARGE}(\text{A2:B6},3)
3rd largest number in the numbers in columns A and B

=\text{LARGE}([A2:B6],3)

List the numbers in descending order:
7
6
5
5
4
4
4
3
3
2

=5
7th largest number in the numbers in columns A and B

= LARGE(array,k)
7th largest number in the numbers in columns A and B

```
= LARGE(array, k)
= LARGE(A2:B6)
```
7th largest number in the numbers in columns A and B

= LARGE(array, k)
= LARGE(A2:B6, 7)
7th largest number in the numbers in columns A and B

List the numbers in descending order:

7
6
5
5
4
4
4
3
3
2

=LARGE(array,k)

=LARGE(A2:B6,7)
7th largest number in the numbers in columns A and B

List the numbers in descending order:
7
6
5
5
4
4
4
3
3
2

=LARGE(array,k)
=LARGE(A2:B6,7)

=4
The \textbf{SMALL} function

\textbf{Syntax:}

\begin{equation}
=\text{SMALL}(\text{array},k)
\end{equation}

\textbf{Arguments:}

- \textit{array} Required
  - The array or range of data for which you want to determine the k-th smallest value.
- \textit{k} Required
  - The position (from the smallest) in the array or cell range of data to return.
The **SMALL** function

**Description:**

• Returns the k-th smallest value in a data set.

**Remarks:**

• If \( n \) is the number of data points in a range, then SMALL(array,1) returns the smallest value.
• If \( n \) is the number of data points in a range, then SMALL(array,\( n \)) returns the largest value.

**Errors:**

#NUM! – If array is empty
#NUM! – If \( k \leq 0 \)
#NUM! – If \( k \) is greater than the number of data points
4th smallest number in first column

=SMALL(array,k)
4th smallest number in first column

```
=SMALL(array,k)
=SMALL(A2:A10
```
4th smallest number in first column

List the numbers in ascending order:

2
3
3
4
4
4
5
6
7

=SMALL(array,k)
=SMALL(A2:A10,4)
4th smallest number in first column

=SMALL(array,k)
=SMALL(A2:A10,4)

List the numbers in ascending order:
2
3
3
4
4
4
5
6
7

=4
2nd smallest number in second column

=SMALL(array,k)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Data</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
</tr>
</tbody>
</table>
2nd smallest number in second column

=SMALL(array,k)
=SMALL(B2:B10)
2nd smallest number in second column

List the numbers in ascending order:

| 1 | 3 | 4 | 7 | 8 | 8 | 12 | 23 | 54 |

=SMALL(array,k)
=SMALL(B2:B10,2)
2nd smallest number in second column

\[
=\text{SMALL}(\text{array},k) = \text{SMALL}(B2:B10,2) = 3
\]

List the numbers in ascending order:

1
3
4
7
8
8
12
23
54
The MEDIAN function

Syntax:

=MEDIAN(number1, number2, …)

Arguments:

• number1  Required
  ▪ 1 to 255 numbers for which you want the median.
• number2, …  Optional
  ▪ 1 to 255 numbers for which you want the median.
The **MEDIAN** function

**Description:**

• Returns the median of the given numbers.

**Remarks:**

• The median is the number in the middle of a set of numbers.
• If there is an even number of numbers in the set, then MEDIAN calculates the average of the two numbers in the middle.
• Arguments can either be numbers or names, arrays, or references that contain numbers.
• Logical values and text representations of numbers that you type directly into the list of arguments are counted.
• If an array or reference argument contains text, logical values, or empty cells, those values are ignored; however, cells with the value zero are included.

**Errors:**

Arguments that are error values or text that cannot be translated into numbers cause errors.
The **MEDIAN** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

=MEDIAN(A1:A5)
The **MEDIAN** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

=MEDIAN(A1:A5)
=3

Microsoft® Excel® Statistical Functions
The **MEDIAN** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

=MEDIAN(A1:A6)
### The **MEDIAN** function

The **MEDIAN** function is used to calculate the middle value in a set of numbers. If there is an even number of values, it calculates the mean of the two middle values.

#### Example

<table>
<thead>
<tr>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

=**MEDIAN**(A1:A6)

=3.5

---

Microsoft® Excel® Statistical Functions
The **COUNT** function

Syntax:

\[=\text{COUNT}(\text{value1}, [\text{value2}],...)\]

Arguments:

• **value1**  Required
  ▪ The first item, cell reference, or range within which you want to count numbers.

• **value2, ...**  Optional
  ▪ Up to 255 additional items, cell references, or ranges within which you want to count numbers.
The **COUNT** function

**Description:**

- Counts the number of cells that contain numbers, and counts numbers within the list of arguments.

**Remarks:**

- Arguments that are numbers, dates, or a text representation of numbers (for example, a number enclosed in quotation marks, such as "1") are counted.
- Logical values and text representations of numbers that you type directly into the list of arguments are counted.
- Arguments that are error values or text that cannot be translated into numbers are not counted.
- If an argument is an array or reference, only numbers in that array or reference are counted. Empty cells, logical values, text, or error values in the array or reference are not counted.

**Errors:**

*None*
The **COUNT** function

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data</td>
<td>Formula</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>2</td>
<td>Sales</td>
<td>=COUNT(A2:A8)</td>
<td>Counts the number of cells that contain numbers in the list in column A</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>12/8/2008</td>
<td>=COUNT(A5:A8)</td>
<td>Counts the number of cells that contain numbers in the last 4 rows of the list</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
<td>=COUNT(A5:A8)</td>
<td>Counts the number of cells that contain numbers in the last 4 rows of the list</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>22.24</td>
<td>=COUNT(A2:A8,2)</td>
<td>Counts the number of cells that contain numbers in the list, and the value 2</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>TRUE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>#DIV/0!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The **COUNTA** function

Syntax:

=COUNTA(value1, [value2],...)

Arguments:

- **value1**  Required
  - The first argument representing the values that you want to count.
- **value2, ...**  Optional
  - Additional arguments representing the values that you want to count, up to a maximum of 255 arguments.
The **COUNTA** function

**Description:**

- Counts the number of cells that are not empty in a range.

**Remarks:**

- Counts cells containing any type of information, including error values and empty text (""").
- The COUNTA function does not count empty cells.

**Errors:**

*None*
The **COUNTA** function

=COUNTA(A2:A8)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data</td>
</tr>
<tr>
<td>2</td>
<td>Sales</td>
</tr>
<tr>
<td>3</td>
<td>12/8/2008</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>22.24</td>
</tr>
<tr>
<td>6</td>
<td>TRUE</td>
</tr>
<tr>
<td>7</td>
<td>#DIV/0!</td>
</tr>
</tbody>
</table>
The **COUNTA** function

=COUNTA(A2:A8)

=6
The **COUNTA** function

**QUIZ Question**

The major difference between the **COUNT** and **COUNTA** functions is that the **COUNTA** function will count empty cells as well as numerical, text, and empty text values.

A) True  
B) False
The **COUNTA** function

**QUIZ Question**

The major difference between the **COUNT** and **COUNTA** functions is that the **COUNTA** function will count empty cells as well as numerical, text, and empty text values.

A) True

B) False  ✓
The **COUNTIF** function

**Syntax:**

\[ =\text{COUNTIF}(\text{range}, \text{criteria}) \]

**Arguments:**

- **range** Required
  - One or more cells to count, including numbers or names, arrays, or references that contain numbers.
    - Blank and text values are ignored.
- **criteria** Required
  - A number, expression, cell reference, or text string that defines which cells will be counted.
    - Criteria can be expressed as 32, ">32", B4, "apples", or "32".
The **COUNTIF** function

**Description:**

• Counts the number of cells within a range that meet a single criterion that you specify.

**Remarks:**

• See the Microsoft® Excel® help for additional remarks.
  • Criteria are case insensitive

**Errors:**

*None*
### The `COUNTIF` function

<table>
<thead>
<tr>
<th>Data</th>
<th>Data</th>
<th>Formula</th>
<th>Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>apples</td>
<td>32</td>
<td><code>=COUNTIF(A2:A5,&quot;apples&quot;)</code></td>
<td>Number of cells with apples in column A</td>
<td>2</td>
</tr>
<tr>
<td>oranges</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>peaches</td>
<td>75</td>
<td><code>=COUNTIF(B2:B5,&quot;&gt;55&quot;)</code></td>
<td>Number of cells with a value greater than 55 in column B</td>
<td>2</td>
</tr>
<tr>
<td>apples</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Microsoft® Excel ® Logical Functions

**AND**

=AND(logical1, [logical2], ...)

**OR**

=OR(logical1, [logical2], ...)

**NOT**

=NOT(logical)

**IF**

=IF(logical_test, [value_if_true], [value_if_false])
The **AND** function

**Syntax:**

=AND(logical1, [logical2], ...)

**Arguments:**

- **logical1**  Required
  - The first condition that you want to test that can evaluate to either TRUE or FALSE.
- **logical2, ...**  Optional
  - Additional conditions that you want to test that can evaluate to either TRUE or FALSE, up to a maximum of 255 conditions.
The **AND** function

**Description:**
- Returns FALSE if one or more arguments is FALSE
- Otherwise, all arguments must evaluate TRUE

**Remarks:**
- Arguments must evaluate to logical values
- Arguments must be arrays or references that contain logical values
- Text and empty cells are ignored in arrays or references

**Errors:**
- #VALUE – If no logical values exist in a specified range
The **AND** function – **EXAMPLE 1**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Formula</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>2</td>
<td>=AND(TRUE, TRUE)</td>
<td>All arguments are TRUE</td>
<td>TRUE</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>=AND(TRUE, FALSE)</td>
<td>One argument is FALSE</td>
<td>FALSE</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>=AND(2&lt;2=4, 2&lt;3=5)</td>
<td>All arguments evaluate to TRUE</td>
<td>TRUE</td>
</tr>
</tbody>
</table>

Microsoft® Excel® Logical Functions

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### The **AND** function – EXAMPLE 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th><strong>Formula</strong></th>
<th><strong>Description</strong></th>
<th><strong>Result</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Data</td>
<td>50 =AND(1, A2, A2&lt;100)</td>
<td>Displays TRUE if the number in cell A2 is between 1 and 100. Otherwise, it displays FALSE.</td>
<td>TRUE</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>104 =IF(AND(1, A4, A4&lt;100), A4, &quot;The value is out of range.&quot;)</td>
<td>Displays the number in cell A4, if it is between 1 and 100. Otherwise, it displays the message &quot;The value is out of range.&quot;</td>
<td>The value is out of range.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>=IF(AND(1, A2, A2&lt;100), A2, &quot;The value is out of range.&quot;)</td>
<td>Displays the number in cell A2, if it is between 1 and 100. Otherwise, it displays a message.</td>
<td>50</td>
</tr>
</tbody>
</table>

Microsoft® Excel® Logical Functions

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The **OR** function

Syntax:

```
=OR(logical1, [logical2], ...)
```

Arguments:

- **logical1** Required
  - The first condition that you want to test that can evaluate to either TRUE or FALSE.
- **logical2, ...** Optional
  - Additional conditions that you want to test that can evaluate to either TRUE or FALSE, up to a maximum of 255 conditions.
The **OR** function

**Description:**
- Returns TRUE if one or more arguments is TRUE
- Otherwise, all arguments must evaluate FALSE

**Remarks:**
- Arguments must evaluate to logical values
- Arguments must be arrays or references that contain logical values
- Text and empty cells are ignored in arrays or references

**Errors:**
#VALUE – If no logical values exist in a specified range
# The OR function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Formula</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>2</td>
<td>=OR(TRUE)</td>
<td>One argument is TRUE</td>
<td>TRUE</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>=OR(1+1=1,2+3=5)</td>
<td>All arguments evaluate to</td>
<td>FALSE</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>=OR(TRUE, FALSE, TRUE)</td>
<td>At least one argument is TRUE</td>
<td>TRUE</td>
</tr>
</tbody>
</table>
The **NOT** function

Syntax:

\[ =\text{NOT}(\text{logical}) \]

Arguments:

- **logical**  Required
  - A value or expression that can be evaluated to TRUE or FALSE.
The **NOT** function

**Description:**

- Reverses the value of its argument.

**Remarks:**

- If logical is FALSE, NOT returns TRUE
- If logical is TRUE, NOT returns FALSE

**Errors:**

None
The **NOT** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Formula</strong></td>
<td><strong>Description</strong></td>
<td>Result</td>
</tr>
<tr>
<td>2</td>
<td>=NOT(FALSE)</td>
<td>Reverses FALSE</td>
<td>TRUE</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>=NOT(1+1=2)</td>
<td>Reverses an equation that evaluates to</td>
<td>FALSE</td>
</tr>
</tbody>
</table>
The **IF** function

**Syntax:**

\[ =\text{IF(logical	extunderscore test, [value	extunderscore if	extunderscore true], [value	extunderscore if	extunderscore false])} \]

**Arguments:**

- **logical	extunderscore test**  Required
  - Any value or expression that can be evaluated to TRUE or FALSE.
- **value	extunderscore if	extunderscore true**  Optional
  - The value that you want to be returned if the logical	extunderscore test argument evaluates to TRUE.
  - If logical	extunderscore test evaluates to TRUE and the value	extunderscore if	extunderscore true argument is omitted (that is, there is only a comma following the logical	extunderscore test argument), the IF function returns 0 (zero).
  - To display the word TRUE, use the logical value TRUE for the value	extunderscore if	extunderscore true argument.
The **IF** function

Syntax:

```
=IF(logical_test, [value_if_true], [value_if_false])
```

Arguments:

- **value_if_false**  Optional
  - The value that you want to be returned if the logical_test argument evaluates to FALSE.
  - If logical_test evaluates to FALSE and the value_if_false argument is omitted, (that is, there is no comma following the value_if_true argument), the IF function returns the logical value FALSE.
  - If logical_test evaluates to FALSE and the value of the value_if_false argument is omitted (that is, in the IF function, there is a comma following the value_if_true argument), the IF function returns the value 0 (zero).
The **IF** function

**Description:**

- The IF function returns one value if a condition you specify evaluates to TRUE, and another value if that condition evaluates to FALSE.

**Remarks:**

- Up to 7 IF functions can be nested as value_if_true and value_if_false arguments to construct more elaborate tests. (2003)
- Up to 64 IF functions can be nested as value_if_true and value_if_false arguments to construct more elaborate tests. (2007)
- If any of the arguments to IF are arrays, every element of the array is evaluated when the IF statement is carried out.

**Errors:**

*None*
The **IF** function

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual Expenses</td>
<td>Predicted Expenses</td>
<td>Formula</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1500</td>
<td>900</td>
<td>=IF(A2&gt;B2,&quot;Over Budget&quot;,&quot;OK&quot;)</td>
<td>Checks whether the first row is over budget</td>
<td>Over Budget</td>
</tr>
<tr>
<td>3</td>
<td>500</td>
<td>900</td>
<td></td>
<td></td>
<td>OK</td>
</tr>
<tr>
<td>4</td>
<td>500</td>
<td>925</td>
<td>=IF(A3&gt;B3,&quot;Over Budget&quot;,&quot;OK&quot;)</td>
<td>Checks whether the second row is over budget</td>
<td></td>
</tr>
</tbody>
</table>

**Microsoft® Excel® Logical Functions**

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Microsoft® Excel® Date Functions

**DATEDIF**

=DATEDIF(startdate,enddate,interval)

**YEARFRAC**

=YEARFRAC(start_date,end_date,[basis])

**TODAY**

=TODAY()
The **DATEDIF** function

**Syntax:**

```
=DATEDIF(startdate,enddate,interval)
```

**Arguments:**

- **startdate** Required
  - A date that represents the start date.

- **enddate** Required
  - A date that represents the end date.

- **interval** Required
  - The type of day count basis to use.
The **DATEDIF** function

**Syntax:**

=DATEDIF(startdate,enddate,interval)

**Arguments:**

- **interval**  **Required**
  - The type of day count basis to use.

<table>
<thead>
<tr>
<th>Interval</th>
<th>Meaning</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>Months</td>
<td>Complete calendar months between the dates.</td>
</tr>
<tr>
<td>d</td>
<td>Days</td>
<td>Number of days between the dates.</td>
</tr>
<tr>
<td>y</td>
<td>Years</td>
<td>Complete calendar years between the dates.</td>
</tr>
<tr>
<td>ym</td>
<td>Months excluding years</td>
<td>Complete calendar months between the dates as if they were of the same year.</td>
</tr>
<tr>
<td>yd</td>
<td>Days excluding years</td>
<td>Complete calendar days between the dates as if they were of the same year.</td>
</tr>
<tr>
<td>md</td>
<td>Days excluding years and months</td>
<td>Complete calendar days between the dates as if they were of the same month and same year.</td>
</tr>
</tbody>
</table>
The **DATEDIF** function

**Description:**

• Computes the difference between two dates in a variety of different intervals.

**Remarks:**

• If you have the interval in another cell referenced by the formula, that cell should not have quotes around the interval string.
• When calculating date intervals, DATEDIF uses the year of `startdate`, not `enddate` when calculating the `yd`, `ym` and `md` intervals

**Errors:**

#VALUE – If `startdate` or `enddate` are not valid dates
#NUM! – If `startdate` is greater than or equal to `enddate`
#NUM! – If interval is not a valid parameter (m, d, y, ym, yd, md)
The **DATEDIF** function

What is the difference in days between the two dates?

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Data</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>2</td>
<td>1/1/2007</td>
<td>Start date</td>
</tr>
<tr>
<td>3</td>
<td>7/30/2007</td>
<td>End date</td>
</tr>
</tbody>
</table>

=DATEDIF(A2,A3,”d”)

Microsoft® Excel® Date Functions
The **DATEDIF** function

What is the difference in days between the two dates?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data</td>
</tr>
<tr>
<td>2</td>
<td>1/1/2007</td>
</tr>
<tr>
<td>3</td>
<td>7/30/2007</td>
</tr>
<tr>
<td>1</td>
<td>Description</td>
</tr>
<tr>
<td>2</td>
<td>Start date</td>
</tr>
<tr>
<td>3</td>
<td>End date</td>
</tr>
</tbody>
</table>

=DATEDIF(A2,A3,"d")
=210

Microsoft® Excel® Date Functions
The **YEARFRAC** function

**Syntax:**

```
=YEARFRAC(start_date,end_date,[basis])
```

**Arguments:**

- **start_date**  Required
  - A date that represents the start date.

- **end_date**  Required
  - A date that represents the end date.

- **basis**  Optional
  - The type of day count basis to use.

<table>
<thead>
<tr>
<th>Basis</th>
<th>Day count basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 or omitted</td>
<td>US (NASD) 30/360</td>
</tr>
<tr>
<td>1</td>
<td>Actual/actual</td>
</tr>
<tr>
<td>2</td>
<td>Actual/360</td>
</tr>
<tr>
<td>3</td>
<td>Actual/365</td>
</tr>
<tr>
<td>4</td>
<td>European 30/360</td>
</tr>
</tbody>
</table>

Microsoft® Excel® Date Functions

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The **YEARFRAC** function

**Description:**

- Calculates the fraction of the year represented by the number of whole days between two dates (the `start_date` and the `end_date`).

**Remarks:**

- Use the YEARFRAC worksheet function to identify the proportion of a whole year's benefits or obligations to assign to a specific term.
- Dates should be entered by using the DATE function, or as results of other formulas or functions.
- All arguments are truncated to integers.

**Errors:**

- #VALUE – If `start_date` or `end_date` are not valid dates
- #NUM! – If `basis` < 0
- #NUM! – If `basis` > 4
The **YEARFRAC** function

What is the fraction of the year between the two dates?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/2007</td>
<td>Start date</td>
</tr>
<tr>
<td>7/30/2007</td>
<td>End date</td>
</tr>
<tr>
<td>2</td>
<td>Actual/360</td>
</tr>
</tbody>
</table>

=YEARFRAC(A2,A3,A4)
The **YEARFRAC** function

What is the fraction of the year between the two dates?

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Data</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>2</td>
<td>1/1/2007</td>
<td>Start date</td>
</tr>
<tr>
<td>3</td>
<td>7/30/2007</td>
<td>End date</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Actual/360</td>
</tr>
</tbody>
</table>

=YEARFRAC(A2,A3,A4)

=0.5833333333
The **TODAY** function

Syntax:

= TODAY()

Arguments:

None
The **TODAY** function

**Description:**
- Returns the serial number of the current date.

**Remarks:**
- If the cell format was General before the function was entered, Excel changes the cell format to Date.
- If you want to view the serial number, you must change the cell format to General or Number.
- The TODAY function is useful when you need to have the current date displayed on a worksheet, regardless of when you open the workbook.
- The TODAY function is dependent on your computer’s system clock being correct.

**Errors:**

*None*
The **TODAY** function

=Today()
The **TODAY** function

= TODAY()
OTHER Functions from HW

• ABS() – returns the absolute value of a number
• TRIM() – returns a string without any leading or trailing spaces
• & - concatenation operator that joins two strings together