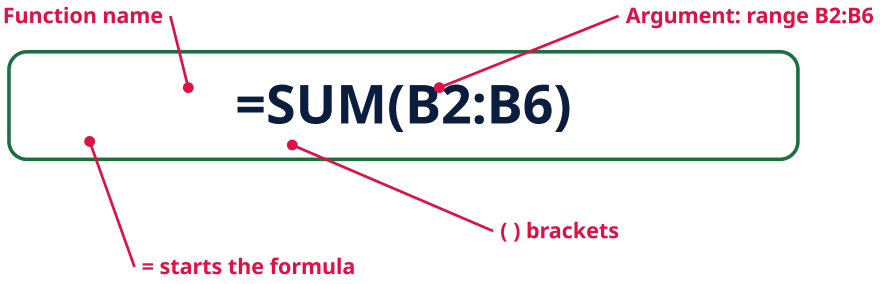
G.C.E. O/L Grade 10 ICT · Lesson 7

7.4 Spreadsheet Functions: SUM, AVERAGE, MAX, MIN and COUNT

A **function** is a ready-made formula with a name. You give it **arguments (parameters)** inside brackets and it returns an answer. In this note you will use the five basic statistical functions **SUM, AVERAGE, MAX, MIN and COUNT** on a mark sheet and on Colombo rainfall data, learn the difference between a **range** (B2:B6) and a **list** (B2,B4,B6), and see why **COUNT counts numbers only**.

1. Syntax of a function



Lists: =SUM(B2,B4,B6) · range + list: =SUM(B2:B6,10)

=FUNCTION(arguments): equals sign, name, brackets, and one or more arguments separated by commas.

- **Range** argument: B2:B6 = all cells from B2 to B6.
- **List** argument: B2,B4,B6 = only those cells (commas).
- Mixed: =SUM(B2:B6,10) adds the range and the number 10.
- Function names are not case-sensitive (=sum(b2:b6) works) but must be spelt correctly, otherwise **#NAME?**.

2. The data: Grade 10 mark sheet

A: Name	B: Sinhala	C: Maths	D: Science	E: ICT
2 Nimal	72	65	58	80
3 Sara	88	91	79	95
4 Kasun	54	47	62	70
5 Dilini	67	ab (absent)	71	85
6 Ishan	81	76	(empty)	64

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3. The five functions

Function	Does	Example	Result
SUM	Adds numbers	=SUM(B2:B6)	362
AVERAGE	Sum ÷ how many numbers	=AVERAGE(B2:B6)	72.4
MAX	Largest number	=MAX(E2:E6)	95
MIN	Smallest number	=MIN(E2:E6)	64
COUNT	How many cells hold numbers	=COUNT(C2:C6)	4

Nimal's total: **=SUM(B2:E2)** = **275**; his average **=AVERAGE(B2:E2)** = **68.75**. Sara's highest mark **=MAX(B3:E3)** = **95**; Kasun's lowest **=MIN(B4:E4)** = **47**.

4. COUNT counts numbers only

Column C (Maths) holds C2:C6 = 65, 91, 47, ab, 76. **=COUNT(C2:C6)** = **4** because 'ab' is text. SUM and AVERAGE also ignore text, so **=AVERAGE(C2:C6)** = 279 ÷ 4 = **69.75**. In column D the empty cell is ignored: **=COUNT(D2:D6)** = **4**, **=AVERAGE(D2:D6)** = **67.5**.

> **NEW 2026** Extra: **COUNTA** counts every non-empty cell, text too. =COUNTA(C2:C6) = **5** (includes 'ab'); =COUNTA(A2:A6) = **5** students.

5. Rainfall example and range vs list

Month (A)	Jan	Feb	Mar	Apr	May	Jun
Rain mm (B2:B7)	58	73	128	245	392	184

- Total: =SUM(B2:B7) = **1080** mm
- Average: =AVERAGE(B2:B7) = **180** mm
- Wettest: =MAX(B2:B7) = **392** (May); driest: =MIN(B2:B7) = **58** (Jan)
- List: =SUM(B2,B4,B6) = 58+128+392 = **578** (Jan, Mar, May only)
- Range of values (spread): =MAX(B2:B7)-MIN(B2:B7) = **334** mm

> 💡 **AutoSum (Σ)** on the Home tab inserts =SUM( ) for you; its arrow gives Average, Count Numbers, Max and Min. In Google Sheets use the **Σ Functions** button.

Key Words

Function – A named, ready-made formula such as SUM.

Argument – Value or range given to a function inside brackets.

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Syntax – The correct way to write a function: =NAME(arguments).	**SUM** – Adds all the numbers in its arguments.
AVERAGE – Total of the numbers divided by how many numbers.	**MAX** – Returns the largest number.
MIN – Returns the smallest number.	**COUNT** – Counts the cells that contain numbers.
COUNTA – Counts all non-empty cells (text too).	**Range argument** – A block such as B2:B6.
List argument – Separate cells with commas such as B2,B4,B6.	**AutoSum** – Σ button that inserts SUM quickly.

Sample Q&A

1. Write the syntax of the SUM function.

> **Answer:** =SUM(number1, number2, ...) or =SUM(range), e.g. =SUM(B2:B6).

2. What is an argument?

> **Answer:** The data (values, cells or ranges) given to a function inside its brackets.

3. Why does =COUNT(C2:C6) give 4 and not 5?

> **Answer:** C5 contains the text ‘ab’; COUNT counts numbers only.

4. Find the average rainfall Jan–Jun.

> **Answer:** =AVERAGE(B2:B7) = 180 mm.

5. Difference between B2:B6 and B2,B6?

> **Answer:** B2:B6 is a range of 5 cells; B2,B6 is a list of only 2 cells.

6. Difference between COUNT and COUNTA?

> **Answer:** COUNT counts numbers only; COUNTA counts all non-empty cells.

MCQ

1. =SUM(B2:B6) for Sinhala marks 72, 88, 54, 67, 81 gives...

A. 362
B. 88
C. 352
D. 5

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2. =AVERAGE(B2:B6) for the same marks gives…

A. 90.5
B. 72.4
C. 72
D. 67

3. =MAX(E2:E6) for ICT marks 80, 95, 70, 85, 64 is…

A. 80
B. 394
C. 95
D. 64

4. =MIN(E2:E6) for the same marks is…

A. 95
B. 70
C. 64
D. 5

5. C2:C6 = 65, 91, 47, ab, 76. =COUNT(C2:C6) is…

A. 5
B. 279
C. 3
D. 4

6. For the same cells =COUNTA(C2:C6) is…

A. 1
B. 4
C. 5
D. 0

7. For the same cells =AVERAGE(C2:C6) is…

A. 55.8
B. #VALUE!
C. 70
D. 69.75

8. Rainfall 58, 73, 128, 245, 392, 184. =SUM(B2:B7) is…

A. 1080
B. 1000
C. 392
D. 6

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9. For the same rainfall =AVERAGE(B2:B7) is…

A. 128
B. 180
C. 216
D. 186.5

10. =SUM(B2,B4,B6) with the rainfall data gives…

A. 578
B. 3
C. 502
D. 1080

11. In =SUM(B2:B6), B2:B6 is the…

A. Operator
B. Function name
C. Result
D. Argument

12. =SUMM(B2:B6) shows…

A. ####
B. #DIV/0!
C. #NAME?
D. 362

13. Which counts how many students have a Maths mark?

A. COUNT
B. SUM
C. AVERAGE
D. MAX

14. =SUM(B2:B6,10) with Sinhala marks gives…

A. 10
B. 372
C. 3620
D. 362

15. The Σ button on the Home tab is…

A. Sort
B. AutoSum
C. Merge & Centre
D. AutoFill

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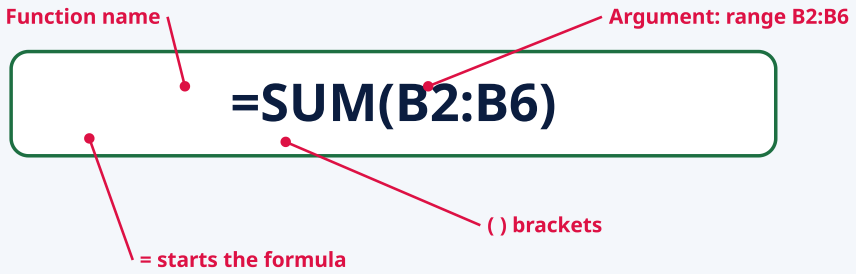
Structured Questions

1. Using the mark sheet, write a formula and give the result for: (i) total of Sara (B3:E3) (ii) average Sinhala mark (iii) highest ICT mark (iv) lowest Science mark. *(8 marks)*

> (i) =SUM(B3:E3) = 353 (ii) =AVERAGE(B2:B6) = 72.4 (iii) =MAX(E2:E6) = 95 (iv) =MIN(D2:D6) = 58.

2. Label the parts of =SUM(B2:B6). *(3 marks)*

> = sign, function name SUM, brackets with the argument (range) B2:B6.



Lists: =SUM(B2,B4,B6) · range + list: =SUM(B2:B6,10)

Model answer.

3. C2:C6 holds 65, 91, 47, ab, 76. Give the results of COUNT, COUNTA, SUM and AVERAGE for this range and explain the difference between COUNT and COUNTA. *(5 marks)*

> COUNT 4, COUNTA 5, SUM 279, AVERAGE 69.75. COUNT counts numbers only; COUNTA counts all non-empty cells.

4. Rainfall Jan–Jun is in B2:B7 (58, 73, 128, 245, 392, 184). Write formulas for the total, average, wettest and driest months and give the answers. *(4 marks)*

> =SUM(B2:B7) = 1080; =AVERAGE(B2:B7) = 180; =MAX(B2:B7) = 392; =MIN(B2:B7) = 58.

5. Explain the difference between a range and a list argument with examples. *(2 marks)*

> Range uses a colon for a block: =SUM(B2:B7); list uses commas for separate cells: =SUM(B2,B4,B6).

Summary

- Function = named ready-made formula: =NAME(arguments).
- Arguments go in brackets; range uses :, list uses commas.
- SUM adds; AVERAGE = sum ÷ count of numbers.
- MAX largest; MIN smallest.
- COUNT counts numbers only; COUNTA counts all non-empty cells.
- Text and empty cells are ignored by SUM, AVERAGE, MAX, MIN.

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- Misspelt function → #NAME?.
- AutoSum Σ inserts SUM, AVERAGE, COUNT, MAX, MIN quickly.

MCQ answer key – 7.4

1. **A** – Add all five.
2. **B** – 362/5.
3. **C** – Largest.
4. **C** – Smallest.
5. **D** – Text not counted.
6. **C** – Text counted too.
7. **D** – 279/4; text ignored.
8. **A** – Total.
9. **B** – 1080/6.
10. **A** – Only B2, B4, B6.
11. **D** – Inside the brackets.
12. **C** – Misspelt name.
13. **A** – Numbers only.
14. **B** – Range + 10.
15. **B** – Inserts SUM.

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