

Spreadsheet Functions

December 1, 2025

Contents

1	Rounding Functions	3
1.1	Round	3
1.2	Roundup	3
1.3	Rounddown	3
2	Mathematical Functions	4
2.1	SIGN	4
2.2	ABS	4
2.3	POWER	4
2.4	LOG	5
2.5	LN	5
2.6	LOG10	5
2.7	EXP	6
2.8	SQRT	6
2.9	PI	6
2.10	SIN	6
2.11	COS	7
2.12	RADIANS	7
2.13	DEGREES	7
2.14	ISNUMBER	7
2.15	ISEVEN	8
2.16	ISODD	8
2.17	ISBLANK	8
3	Statistical Functions	9
3.1	MIN	9
3.2	MAX	9
3.3	VAR	9
3.4	STDEV	9
3.5	SUM	10
3.6	PRODUCT	10
3.7	AVERAGE	10
3.8	COUNT	11

3.9	MEDIAN	11
3.10	PERCENTILE	11
3.11	QUARTILE	12
3.12	SKEW	14
3.13	CORREL	14
3.14	FACT	15
3.15	COMBIN	15
3.16	COMBIN	15
4	Logical Functions	15
4.1	AND	15
4.2	OR	16
4.3	NOT	16
4.4	XOR	16
4.5	IF	17
4.5.1	IF...ELSEIF...ELSEIF...ELSE	17
4.5.2	How many real roots?	18
4.5.3	How is the weather outside?	18
5	Random Numbers	19
5.1	RAND	19
5.2	RANDBETWEEN	19
6	Date and Time Functions	19
6.1	NOW	19
6.2	YEAR	20
6.3	MONTH	20
6.4	DAY	20
6.5	HOURL	20
6.6	MINUTE	20
6.7	SECOND	21
7	String Functions	21
7.1	CHAR	21
7.2	CODE	21
7.3	UNICODE	21
7.4	UNICHAR	21
7.5	LOWER	22
7.6	UPPER	22
7.7	CONCATENATE	22
7.8	LEFT	22
7.9	RIGHT	23
7.10	MID	23
7.11	LEN	23
7.12	ISTEXT	23
7.13	ISNONTEXT	24

7.14 REPLACE	24
7.15 SEARCH	24

1 Rounding Functions

1.1 Round

	A	B	C	D	E	F
1		=ROUND(1.1234,3)				
2						

1.123

	A	B	C	D	E	F
1		=ROUND(1.1237,3)				
2						

1.124

1.2 Roundup

	A	B	C	D	E	F
1		=ROUNDUP(1.1234,3)				
2						

1.124

	A	B	C	D	E	F
1		=ROUNDUP(1.1237,3)				
2						

1.124

1.3 Rounddown

	A	B	C	D	E	F
1		=ROUNDDOWN(1.1234,3)				
2						

1.123

	A	B	C	D	E	F
1		=ROUNDDOWN(1.1237,3)				
2						

1.123

2 Mathematical Functions

2.1 SIGN

	A	B	C	D	E	F
1		=SIGN(16)				
2						

1

	A	B	C	D	E	F
1		=SIGN(-8)				
2						

-1

	A	B	C	D	E	F
1		=SIGN(0)				
2						

0

2.2 ABS

	A	B	C	D	E	F
1		=ABS(-25)				
2						

25

	A	B	C	D	E	F
1		=ABS(25)				
2						

25

2.3 POWER

	A	B	C	D	E	F
1		=POWER(2; 3)				
2						

8

	A	B	C	D	E	F
1		=POWER(10; 4)				
2						

10000

2.4 LOG

	A	B	C	D	E	F
1		=LOG(1000)				
2						

3

	A	B	C	D	E	F
1		=LOG(8; 2)				
2						

3

2.5 LN

	A	B	C	D	E	F
1		=LN(2,71828)				
2						

0.999999327347282

	A	B	C	D	E	F
1		=LN(EXP(1))				
2						

1

2.6 LOG10

	A	B	C	D	E	F
1		=LOG10(1000))				
2						

3

2.7 EXP

$$EXP(x) = e^x$$

	A	B	C	D	E	F
1		=EXP(1)				
2						

2.71828182845905

	A	B	C	D	E	F
1		=LN(EXP(2))				
2						

2

2.8 SQRT

	A	B	C	D	E	F
1		=SQRT(16)				
2						

4

2.9 PI

	A	B	C	D	E	F
1		=PI()				
2						

3.14159265358979

2.10 SIN

	A	B	C	D	E	F
1		=SIN(PI()/2)				
2						

1

2.11 COS

	A	B	C	D	E	F
1		=COS(2 * PI())				
2						

1

2.12 RADIANS

	A	B	C	D	E	F
1		=RADIANS(90)				
2						

1.5707963267949

2.13 DEGREES

	A	B	C	D	E	F
1		=DEGREES(PI()/2)				
2						

90

2.14 ISNUMBER

	A	B	C	D	E	F
1	8	=ISNUMBER(A1)				
2						

TRUE

	A	B	C	D	E	F
1	Cat	=ISNUMBER(A1)				
2						

FALSE

2.15 ISEVEN

	A	B	C	D	E	F
1	8	=ISEVEN(A1)				
2						

TRUE

	A	B	C	D	E	F
1	9	=ISEVEN(A1)				
2						

FALSE

2.16 ISODD

	A	B	C	D	E	F
1	8	=ISODD(A1)				
2						

FALSE

	A	B	C	D	E	F
1	9	=ISODD(A1)				
2						

TRUE

2.17 ISBLANK

	A	B	C	D	E	F
1		=ISBLANK(A1)				
2						

TRUE

	A	B	C	D	E	F
1	Cats	=ISBLANK(A1)				
2						

FALSE

3 Statistical Functions

3.1 MIN

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=MIN(A1:A4)					

5

3.2 MAX

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=MAX(A1:A4)					

12

3.3 VAR

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=VAR(A1:A4)					

10.9166666666667

3.4 STDEV

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=STDEV(A1:A4)					

3.30403793359984

3.5 SUM

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=SUM(A1:A4)					

35

3.6 PRODUCT

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PRODUCT(A1:A4)					

4620

3.7 AVERAGE

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=AVERAGE(A1:A4)					

8.75

3.8 COUNT

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=COUNT(A1:A4)					

4

3.9 MEDIAN

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=MEDIAN(A1:A4)					

9.0

3.10 PERCENTILE

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PERCENTILE(A1:A4; 0)					

5

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PERCENTILE(A1:A4; 1)					

12

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PERCENTILE(A1:A4; 0.5)					

9

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PERCENTILE(A1:A4; 0.25)					

6.5

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=PERCENTILE(A1:A4; 0.75)					

11.25

3.11 QUARTILE

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=QUARTILE(A1:A4; 0)					

5

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=QUARTILE(A1:A4; 1)					

6.5

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=QUARTILE(A1:A4; 2)					

9

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=QUARTILE(A1:A4; 3)					

11.25

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=QUARTILE(A1:A4; 4)					

12

3.12 SKEW

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=SKEW(A1:A4)					

-0.592518588276328

	A	B	C	D	E	F
1	5					
2	7					
3	12					
4	11					
5	=KURT(A1:A4)					

-3.86900530272129

3.13 CORREL

	A	B	C	D	E	F
1	5	10				
2	7	14				
3	12	24				
4	11	22				
5	=CORREL(A1:A4; B1:B4)					

1

	A	B	C	D	E	F
1	5	22				
2	7	24				
3	12	14				
4	11	10				
5	=CORREL(A1:A4; B1:B4)					

-0.862595419847328

3.14 FACT

3.15 COMBIN

	A	B	C	D	E	F
1	=FACT(5)					
2						

120

3.16 COMBIN

	A	B	C	D	E	F
1	=COMBIN(5; 2)					
2						

$${}^n\text{Cr} = \frac{n!}{r!(n-r)!} = \frac{5!}{2!(5-2)!} = \frac{5 \times 4 \times 3!}{2 \times 1 \times 3!} = \frac{20}{2} = 10$$

10

4 Logical Functions

4.1 AND

	A	B	C	D	E	F
1		TRUE	FALSE			
2		TRUE	TRUE			
3		FALSE	FALSE			
4		=AND(B1:C1)				
5		=AND(B2:C2)				
6		=AND(B3:C3)				

FALSE

TRUE

FALSE

4.2 OR

	A	B	C	D	E	F
1		TRUE	FALSE			
2		TRUE	TRUE			
3		FALSE	FALSE			
4		=OR(B1:C1)				
5		=OR(B2:C2)				
6		=OR(B3:C3)				

TRUE
TRUE
FALSE

4.3 NOT

	A	B	C	D	E	F
1		TRUE				
2		TRUE				
3		FALSE				
4		=NOT(B1)				
5		=NOT(B2)				
6		=NOT(B3)				

FALSE
FALSE
TRUE

4.4 XOR

	A	B	C	D	E	F
1		TRUE	FALSE			
2		TRUE	TRUE			
3		FALSE	TRUE			
4		FALSE	FALSE			
5		=XOR(B1:C1)				
6		=XOR(B2:C2)				
7		=XOR(B3:C3)				

TRUE
FALSE
TRUE
FALSE

4.5 IF

	A	B	C	D	E	F
1	5	6	12	-1	10	
2	=IF(A1 = 5; TRUE; FALSE)					
3	=IF(AND(A1 >= 5; SIGN(D1) = -1); "YES"; "NO")					
4	=IF(AND(A1 = 5; B1 = 6; C1 > 5); "YES"; "NO")					
5	=IF(A1 < 0; "NEG"; IF(A1 = 0; "ZERO"; "POS"))					
6						
7						

TRUE
YES
YES
POS

4.5.1 IF...ELSEIF...ELSEIF...ELSE

	A	B	C	D	E	F
1	5	22				
2	7	24				

Write an IF statement to handle this situation:

- If the value in A1 is less than 10, return "LOW"
- If the value in A1 is between 10 and 20 (inclusive), return "MEDIUM"
- If the value in A1 is between 21 and 30 (inclusive), return "HIGH"
- If the value in A1 is greater than 30, return "VERY HIGH"

```
=IF(A1 < 10; "LOW";
  IF(AND(A1 >= 10; A1 <= 20); "MEDIUM";
    IF(AND(A1 >= 21; A1 <= 30); "HIGH";
      "VERY HIGH")))
```

A shorter version:

```
=IF(A1 < 10; "LOW";
  IF(A1 <= 20; "MEDIUM";
    IF(A1 <= 30; "HIGH";
      "VERY HIGH")))
```

The answer is

LOW

Use IFS function (if your Excel supports it):

```
=IFS(A1 < 10; "LOW";
    AND(A1 >= 10; A1 <= 20); "MEDIUM";
    AND(A1 >= 21; A1 <= 30); "HIGH";
    A1 > 30; "VERY HIGH")
```

4.5.2 How many real roots?

	A	B	C	D	E	F
1	-1	5	100			
2	=POWER(B1; 2) - 4 * A1 * C1					

Write an IF statement (indeed they are expressions in Excel) to determine how many real roots the quadratic equation $Ax^2 + Bx + C = 0$ has, based on the values in A1, B1, and C1. Return 0 (No real roots), 1 (repeated root), or 2 (two real roots).

```
=IF(B2 < 0; 0;
    IF(B2 = 0; 1; 2))
```

Use IFS function (if your Excel supports it):

```
=IFS(B2 < 0; 0;
    B2 = 0; 1;
    B2 > 0; 2)
```

4.5.3 How is the weather outside?

Suppose that the temperature is in cell A1 (in degrees Celsius). Write an IF statement to return the following:

- If the temperature is less than or equal to 0, return "Freezing"
- If the temperature is greater than 0 but less than or equal to 15, return "Cold"
- If the temperature is greater than 15 but less than or equal to 25, return "Warm"
- If the temperature is greater than 25 but less than or equal to 35, return "Hot"
- If the temperature is greater than 35, return "Too Hot"

```
=IF(A1 <= 0; "Freezing";
    IF(A1 <= 15; "Cold";
        IF(A1 <= 25; "Warm";
            IF(A1 <= 35; "Hot";
                "Too Hot"))))
```

Use IFS function (if your Excel supports it):

```
=IFS(A1 <= 0; "Freezing";  
    A1 <= 15; "Cold";  
    A1 <= 25; "Warm";  
    A1 <= 35; "Hot";  
    A1 > 35; "Too Hot")
```

5 Random Numbers

5.1 RAND

	A	B	C	D	E	F
1		=RAND()				
2						

```
// A random number between 0 and 1, e.g.  
0.5432101234
```

5.2 RANDBETWEEN

	A	B	C	D	E	F
1		=RANDBETWEEN(1; 10)				
2						

```
// A random integer between 1 and 10, e.g.  
// The range is inclusive, so 1 and 10 are possible outputs  
7
```

6 Date and Time Functions

6.1 NOW

	A	B	C	D	E	F
1		=NOW()				
2						

```
01/12/25 08:10 PM
```

6.2 YEAR

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=YEAR(B1)				

2025

6.3 MONTH

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=MONTH(B1)				

12

6.4 DAY

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=DAY(B1)				

1

6.5 HOUR

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=HOUR(B1)				

20

6.6 MINUTE

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=MINUTE(B1)				

10

6.7 SECOND

	A	B	C	D	E	F
1		01/12/25 08:10 PM				
2		=SECOND(B1)				

50

7 String Functions

7.1 CHAR

	A	B	C	D	E	F
1		=CHAR(65)				
2						

A

7.2 CODE

	A	B	C	D	E	F
1		=CODE("B")				
2						

66

7.3 UNICODE

	A	B	C	D	E	F
1		=UNICODE("🍌")				
2						

9786

7.4 UNICHAR

	A	B	C	D	E	F
1		=UNICHAR(9786)				
2						

Output: 🍌

7.5 LOWER

	A	B	C	D	E	F
1		istanBUL				
2		=LOWER(B1)				

istanbul

7.6 UPPER

	A	B	C	D	E	F
1		istanBUL				
2		=UPPER(B1)				

ISTANBUL

7.7 CONCATENATE

	A	B	C	D	E	F
1		İstanbul	University			
2		=CONCATENATE(B1; C1)				

İstanbulUniversity

	A	B	C	D	E	F
1		İstanbul	University			
2		=CONCATENATE(B1;" "; C1)				

İstanbul University

7.8 LEFT

	A	B	C	D	E	F
1		İstanbul	University			
2		=LEFT(B1; 3)				

İst

7.9 RIGHT

	A	B	C	D	E	F
1		İstanbul	University			
2		=RIGHT(B1; 3)				

bul

7.10 MID

	A	B	C	D	E	F
1		İstanbul	University			
2		=MID(B1; 6; 3)				
3		=MID(C1; 5; 2)				

bul
er

7.11 LEN

	A	B	C	D	E	F
1		İstanbul	University			
2		=LEN(B1)				
3		=LEN(C1)				

8
10

7.12 ISTEXT

	A	B	C	D	E	F
1		İstanbul	1453			
2		=ISTEXT(B1)				
3		=ISTEXT(C1)				

TRUE
FALSE

7.13 ISNONTEXT

	A	B	C	D	E	F
1		Istanbul	1453			
2		=ISNONTEXT(B1)				
3		=ISNONTEXT(C1)				

FALSE

TRUE

7.14 REPLACE

	A	B	C	D	E	F
1		Istanbul				
2		=REPLACE(A1; 4; 2; "*")				
3		=REPLACE(A1; 3; 5; "?")				

Is*bul

Is?l

7.15 SEARCH

	A	B	C	D	E	F
1		Istanbul				
2		=SEARCH("bul"; A1)				
3		=SEARCH("tan"; A1)				
4		=SEARCH("something"; A1)				

6

3

#VALUE!