Contour Interpolation Between Two Spot Heights

Positions of contour lines crossing the line between two spot heights by linear interpolation, with the first contour value, its distance and the contour spacing.

Method: Linear interpolation of contours (indirect contouring)

Input parameters

Unit system: SI

Parameter	Value	Unit
Reduced level at point 1	101.35	m
Reduced level at point 2	106.80	m
Horizontal distance between the points	40.000	m
Contour interval	1.0000	m

Calculated results

Parameter	Value	Unit
First contour value crossed	102.00	m
Distance of the first contour from point 1	4.7706	m
Spacing between contours	7.3394	m
Number of contours crossed	5.0000	
Gradient (1 in ...)	7.3394	

Notes for this case

• Ground is assumed to slope uniformly between the two points: a contour at level C lies at x = D(C − h_1)/(h_2 − h_1) from point 1, and successive contours are DΔ/|h_2 − h_1| apart. The count excludes contours exactly at either point. Interpolate only between points on the same uniform slope (not across ridges or valleys).

Formula and method

$$x = D\frac{C - h_1}{h_2 - h_1}, \quad \Delta x = \frac{D \cdot CI}{|h_2 - h_1|}$$

Variables

h_1	Reduced level at point 1	m
h_2	Reduced level at point 2	m
D	Horizontal distance between the points	m
CI	Contour interval	m
C_1	First contour value crossed	m
x_1	Distance of the first contour from point 1	m
Δx	Spacing between contours	m
n	Number of contours crossed	-
g	Gradient (1 in ...)	-

Method and standards

Contours.

Assumptions and limits

- Uniform slope between the points.

References

Linear interpolation of contours (indirect contouring)

Report details

Report reference	FCC-TACV-M9E3 (the same inputs always give the same reference)
Generated	23 November 2026, 18:00 UTC
Calculator	Contour Interpolation Between Two Spot Heights
Method last reviewed	17 November 2026
Software release	FireCAD Calc, release of 22 November 2026
Release checks	3 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/civil/surveying/contour-interpolation

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.