

ROOF PITCH CHART

Every pitch from 1/12 to 24/12, with the angle, the multiplier you have to apply to a footprint, and the rafter length that goes with it.

Pitch is written as inches of rise over 12 inches of run, and almost everything else about a roof falls out of that one fraction. The angle is the arctangent of it. The multiplier is the hypotenuse of the same triangle, which is the number your footprint has to be multiplied by before it means anything. The rafter length is that multiplier again, measured out over whatever run you have.

The table below is the whole relationship in one place. It is the reason a 1,200 square foot footprint is never 1,200 square feet of shingles.

Pitch, angle, multiplier and rafter length

Pitch	Angle, degrees	Slope multiplier	Grade	Rafter per 12 ft of run
1/12	4.8	1	8.3%	12.04
2/12	9.5	1.01	16.7%	12.17
3/12	14	1.03	25%	12.37
4/12	18.4	1.05	33.3%	12.65
5/12	22.6	1.08	41.7%	13
6/12	26.6	1.12	50%	13.42
7/12	30.3	1.16	58.3%	13.89
8/12	33.7	1.2	66.7%	14.42
9/12	36.9	1.25	75%	15
10/12	39.8	1.3	83.3%	15.62
11/12	42.5	1.36	91.7%	16.28
12/12	45	1.41	100%	16.97
13/12	47.3	1.47	108.3%	17.69
14/12	49.4	1.54	116.7%	18.44
15/12	51.3	1.6	125%	19.21
16/12	53.1	1.67	133.3%	20
17/12	54.8	1.73	141.7%	20.81
18/12	56.3	1.8	150%	21.63
19/12	57.7	1.87	158.3%	22.47
20/12	59	1.94	166.7%	23.32
21/12	60.3	2.02	175%	24.19
22/12	61.4	2.09	183.3%	25.06

Pitch	Angle, degrees	Slope multiplier	Grade	Rafter per 12 ft of run
23/12	62.4	2.16	191.7%	25.94
24/12	63.4	2.24	200%	26.83

Angle is the roof plane against horizontal. Grade is rise over run as a percent, so a 12/12 roof is a 100 percent grade and a 45 degree angle at the same time.

Every figure on this sheet was produced by the same calculator that runs at contractorhandbook.com, free and with no signup.

These are estimating figures for ordering and pricing, not engineering. Nothing here sizes a structural member, checks a load, or replaces local code, a permit, or a manufacturer's installation instructions. Where a rule of thumb is doing the work it is written into the notes under each table rather than hidden.