

Roof Pitch Chart: Degrees, Slope % & Multipliers

Every pitch from 1/12 to 24/12 with its angle, slope and the multipliers that turn plan measurements into real roof area and hip/valley lengths.

Pitch	Angle	Slope	Area multiplier	Hip/valley per ft of run	Roof sq ft over 2,000 sq ft footprint
1/12	4.76°	8.3%	1.0035	1.4167	2,007
2/12	9.46°	16.7%	1.0138	1.4240	2,028
3/12	14.04°	25.0%	1.0308	1.4361	2,062
4/12	18.43°	33.3%	1.0541	1.4530	2,108
5/12	22.62°	41.7%	1.0833	1.4743	2,167
6/12	26.57°	50.0%	1.1180	1.5000	2,236
7/12	30.26°	58.3%	1.1577	1.5298	2,315
8/12	33.69°	66.7%	1.2019	1.5635	2,404
9/12	36.87°	75.0%	1.2500	1.6008	2,500
10/12	39.81°	83.3%	1.3017	1.6415	2,603
11/12	42.51°	91.7%	1.3566	1.6853	2,713
12/12	45.00°	100.0%	1.4142	1.7321	2,828
13/12	47.29°	108.3%	1.4743	1.7815	2,949
14/12	49.40°	116.7%	1.5366	1.8333	3,073
15/12	51.34°	125.0%	1.6008	1.8875	3,202
16/12	53.13°	133.3%	1.6667	1.9437	3,333
17/12	54.78°	141.7%	1.7341	2.0017	3,468
18/12	56.31°	150.0%	1.8028	2.0616	3,606
19/12	57.72°	158.3%	1.8727	2.1230	3,745
20/12	59.04°	166.7%	1.9437	2.1858	3,887
21/12	60.26°	175.0%	2.0156	2.2500	4,031
22/12	61.39°	183.3%	2.0883	2.3154	4,177
23/12	62.45°	191.7%	2.1619	2.3819	4,324
24/12	63.43°	200.0%	2.2361	2.4495	4,472

How to use it

Roof area = footprint (including overhangs) × area multiplier. Example: a 50 × 30 ft footprint with 1 ft overhangs is 52 × 32 = 1,664 sq ft; at 6/12 (× 1.1180) that is 1,860 sq ft, or 18.6 squares before waste.

Rafter length = horizontal run × area multiplier. Hip or valley length on a regular 45° hip = run of the common rafter × the hip/valley per-ft figure ($\sqrt{2 + (\text{rise} \div 12)^2}$).

Angle = $\text{atan}(\text{rise} \div 12)$. Slope % = $\text{rise} \div 12 \times 100$. Pitches below 4/12 are low-slope for asphalt shingles: check the shingle wrapper for the minimum slope and the extra underlayment it requires.

Figures are pure geometry, calculated the same way as the roof pitch calculator and pitch chart on smartroofingcalculator.com.