

Vertical Miter Calculator — Quick Guide

What This Is

A web app that runs in your browser. There is nothing to install and no account to create. All calculations happen on your own device, and your entries are saved in that same browser.

What It's For

Trim does not only change direction around a corner. It also changes direction in the plane of the wall, where a baseboard meets a stair skirt or where two pieces of different heights join. The angle of that joint depends on the face height of each board and the angle between them, and it often comes out steep. When it is steeper than a miter saw can cut, the cut has to be made another way.

Why You'd Want to Use It

Take a baseboard that runs to the foot of a staircase and has to meet a skirt board that is much taller. You can let the skirt's top edge run down until it reaches baseboard height and close the joint with a plumb cut, miter the two boards together across their faces, or turn the skirt plumb for a short vertical piece and then level into the baseboard. This app works out all three, so you can compare them for your own heights and stair pitch before cutting, instead of drawing the joint full size on scrap and reading the angles with a bevel gauge.

The same tool handles two trims of different heights meeting at any angle. When a result is steeper than your saw will go, it shows the miter saw setting with the board turned against the fence, as an alternative to a track saw.

What It Does

- **Solves two-trim joints.** Takes the face height of each piece, the corner angle between them, and whether the shared flush edge is on the outside or inside of the bend.
- **Solves stair joints.** Covers the foot or head of a stairwell, with the stair pitch entered as rise and run or as an angle. Choose a single miter across both boards, a plumb cut on the skirt, or a plumb piece that turns the skirt plumb and then level into the baseboard (foot of stairs only).
- **Reports each cut in full.** Gives the miter angle for each piece, which edge carries the long point, and how far that point extends. Single miters also show the length of the joint line; plumb cuts show how tall the plumb face is compared with the baseboard; a plumb piece shows two joints, each with its own pair of cuts.
- **Draws the joint.** Shows a wall-view diagram of the boards and cuts, updated as you type.
- **Flags steep cuts.** Warns when a cut is steeper than the saw limit you set, with a link straight to the Steep-Angle Helper.
- **Splits steep angles.** The Steep-Angle Helper gives the track saw angle, the miter saw setting for a board turned to any angle against the fence, and a table of common board angles. It also gives the board angle for a straight saw and for the saw at its limit.

- **Converts feet and inches.** A built-in converter turns feet, inches and sixteenths into the decimal inches the fields use, and can fill the field you were last in.
- **Remembers your entries.** Your values, choices and last-used mode are there when you return.

How to Use It

1. Choose **Two Trims** or **Stairs** at the top of the page.
2. **Two Trims:** enter the face height of Piece A and Piece B, then the corner angle between them (90 for a square corner). Choose whether the shared flush edge is on the outside or inside of the bend.
3. **Stairs:** choose Foot of stairs or Head of stairs, enter the baseboard and skirt heights, and enter the stair pitch as rise and run or as an angle. Then choose Single miter, Plumb cut or Plumb piece. For Plumb piece, also choose whether the plumb piece is the same height as the baseboard or the skirt.
4. (Optional) To enter a measurement in feet and inches, tap **Use the converter** under the fields, enter the reading, and tap **Use this value**. It fills the last measurement field you tapped.
5. Read the results. Each piece shows its miter angle, which edge has the long point, and how far it extends. Use the diagram to confirm the joint looks the way you expect.
6. Cut each piece lying flat, face up, with the saw bevel at 0° and the miter set to the angle shown.
7. (Optional) If a cut is steeper than your saw allows, set your **Saw limit** in the Steep-Angle Helper, or tap the link in the warning to open it with the steepest cut loaded. Each cut also has a **Use** button.
8. (Optional) In the helper, enter the **Board to fence** angle, where 90° is square to the fence. The card shows the miter saw setting, the track saw angle, and whether the setting fits your limit.

A Note on Assumptions and Saw Angles

The app assumes flat trim on a plumb wall, cut square through its thickness. Heights are face widths measured across each board, not plumb heights. In Stairs mode, the two boards are assumed to share a flush bottom edge where they meet. Miter angles are measured from a square cut, so they apply with the piece lying flat, face up, and the bevel at 0°. Crown and other profiled trim are not covered.

In the Steep-Angle Helper, “opposite” means the saw swings the other way from a normal miter for that cut, and the board is turned against the direction the saw would normally swing. A board turned on the saw table needs a stop or jig to hold it against the fence. Try the setup on scrap first.

A plumb piece gets angles for both joints but no length, since that depends on where you stop the skirt; measure it on site, long point to long point. “Room side” is the plumb piece’s edge facing away from the stairs, and “stair side” faces them.