Hideaway Pin Arrangement formula for continuous weaving on the rectangle. What you are looking for is a rectangle length, given a particular width (the narrow dimension) of a rectangle. This will make for a perfect continuous weaving with just the right number of pins, none lacking or none extra at the finish. This formula will let you find that length in <u># of pins</u> for a particular width in <u># of pins</u>. The left corner is pin #1, you just have to find the number for the right corner. Perfect for right-return weaving method.

Brief Explanation: A perfect rectangle 1, 2, or 3 squares (multiples of width) long is 1, 2, or 3 times the width in number of pins. The 4th square adds one less pin than that width pin count. The 5th adds the full width pin count. Then one less, then full width, on and on.

HORIZONTAL graph version of same formula. w = width (in # of pins). Add values from left to right starting from square 1. The sum is the pin count for the rectangle right corner for the length (in squares) rectangle you want. This is laid out like your rectangle loom would be laid out when weaving - horizontally.

Square 1	2	3	4	5	6	7	8	9	10
w	w	w	w-1	w	w-1	w	w-1	w	w-1

VERTICAL column display of same formula: Makes it easy to add the numbers this way. In this worksheet example width = 30 pins. This can be done with a pencil on paper. Just stop when you get to the length you want. You always count the corner pin when counting the width, and again when counting the length.

Square (nominal multiple of width)	amount	add	Rectangle Length in pins
1	w	30	30
2	w	30	60
3	w	30	90
4	w-1	29	119
5	w	30	149
6	w-1	29	178
7	w	30	208
8	w-1	29	237
9	w	30	267

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How I do it

30 1
+30
60 2
+30
90 3
+29
119 4
+30
149 5
+29
178 6

The one exception to the formula is that for rectangles with an odd number of squares, you will have an extra pin on the lower part of the last square. When starting a weaving on a rectangle with an odd number of squares, you can fix this by taking the initial strand around 2 pins at the 180 degree yarn turn at the lower right corner of the loom. If you go around the lower right corner pin and the one to the left of it you will have no pins left at the finish. Find a photo of this in my weaving instructions, page 2.

I don't have a video on rectangle weaving, but I discovered one on Youtube by people who used my pin arrangement and weaving method. Find it by searching for 'rectangle instruction 0001'.

Turning Points Formula. How to string out the very first yarn zig zag.

Brief explanation: For the first **2** squares, add the # of pins in the width. For the 3rd, add one less than that, then the full # of pins in the width and keep alternating. This also works for the Turning Points for the left-return weaving method.

Turning Points formula - horizontal graph

You only need one less turning point than there are squares in your rectangle.

Square 1	2	3	4	5	6	7	8	9
w	w	w-1	W	w-1	w	w-1	w	w-1

Turning Points formula - vertical column worksheet.

Start first strand of yarn zig-zag in upper left corner of rectangle. T.P. 1 is on the lower rail, T.P. 2 on the top rail, then back down to the bottom rail and so on.

Square	amount	add	T.P.
1	w	30	30
2	w	30	60
3	w-1	29	89
4	w	30	119
5	w-1	29	148
6	w	30	178
7	w-1	29	207
8	w	30	237

How to determine actual rectangle lengths on paper, before starting construction.

Choose a proposed pin spacing (commonly referred to as 'sett'). In this example we will use 5/16 inch which happens to be almost exactly 8mm. For my looms, I call this Medium Sett. A coarser pin spacing would be 3/8 inch, I use ¼ inch for my Fine Sett looms.

To find a width dimension (narrow side of rectangle): In the formula chart on page 1, the width used is 30 pins. For an expanse of 30 pins, there are 29 spaces, in this case 5/16 inch. You could multiply the fraction, but I do it with the inch decimal value. 29 x .3125 equals 9.0625 inches. When designing your rectangle loom, you could modify your width pin count to get the width dimension you want. Remember that when a weaving is taken off the loom, the finished width is less than the width on the loom.

To find the length of a proposed pin layout, multiply the number of spaces (one less than # of pins) times the space value. For instance for 178 pins, 177 spaces times .3125 equals 55.3125 inches. If you were looking for a longer rectangle, you could add a whole square (nominal width) to make this loom about 9 inches longer. A slightly longer rectangle can be achieved by changing the width by one pin. Adding only one pin to the width would in this case add 6 pins to the length, as we are figuring 6 squares. Adding 6 spaces to the 177 spaces already figured would give 183 spaces or 57.1875 inches. You could also lower the number of pins in the width to change the rectangle length if you were looking for a specific length. Keep in mind that continuous weaving makes a bias weave that can stretch out in length when taken off the loom.

I do calculations like this when planning out an adjustable length rectangle loom. Especially when the long rails will have settings for multiple widths that I use. I can tell ahead of time where different rectangle settings will occur. If I do not want to have the settings for different widths occur at the same pin, I can modify the pin count of one of the widths to have it fall on an un-used pin. This is so I can simplify the marking of the locations of the color-coded settings marks. If you are making a one-width rectangle loom you would not care about this. And if you make a non-adjustable rectangle loom you would only need to know the width and length. I.e., 30 x 178 pins.

Construction Tips

You can make a rectangle loom frame by joining individual wood pieces together in several ways. I won't go into any of these methods. It would depend on what tools you have available to do the cuts, drilling, etc.

The easiest way to construct a rectangle loom would be to make it on a solid board, like a strip of plywood. You should be able to drive nails into a softer plywood, such as pine, without splitting the wood. Or maybe a solid pine board also would not have to have a hole drilled out for each nail.

Here is a rectangle loom I made out of a plywood board. I have also used Melamine which is a hard pressed board with a white plastic coating. With a solid board you don't have to mess with making any joints.

I am set up with a drill press and I have templates made to locate the holes for the nails in a straight line and with the correct spacing. To prevent any possible splitting of the wood, for this project I drilled the holes for each nail. Easier for me because I am all set up to drill the holes. I have seen plywood for sale at Home Depot made entirely out of pine wood. I would think you could drive the nails into this softer wood without splitting the wood. I recommend getting a drill press, not that costly and very useful.

After I have the nails started, I drive them down to the final height by laying an oak wood strip alongside the nails to stop the hammer from driving the nail too far down. Presently the nails height I use is 9/16”, the nails are 1” long panel nails.

My local Home Depot has a free cutting service, at least for the first several cuts. They can cut a 4' x 8' plywood panel lengthwise or otherwise. They do have a limit on how narrow they can cut, or how small a piece they can cut; out of safety concerns. I think they can cut a 12” wide strip no problem.