

Chapter 20-P

BOTTOM-UP SHAPING: ON PAPER

One key advantage of charts is showing how the various pieces of a project like a sweater are shaped. We could go so far as to chart every knitting operation on every row of the entire item. We don't usually need to do that, but we could if we wanted to.

But there's nothing to stop us from charting the tricky bits: the places where we have to do decreases and increases to get over and around all those body parts that stick out and therefore need something besides a flat expanse of fabric. We already saw simple shaping of mitten fingertips and sock toes in the part one chapters "Decreases" and "Increases." Now we'll look in great detail at the shaping we have to do around arms, necks, and shoulders.

A Few Preliminaries

We'll chart the shaping instructions for "The Basic Vest" in the size small, but let's talk about some big-picture ideas before we dive into the actual charting.

Remember Our Very First Charting Rule!

When we look at shaping charts, we have to remember the very first charting rule, that we're looking at the public side of the work. The chart shows us what we see when we look at someone wearing the finished garment.

That means that when we're working the **back**, the **right** edge of the chart is at the wearer's **right** and the left edge of the chart is at the wearer's left. Think of the chart being held up below the **back** of the wearer's head. (Note **back** and **back** go together.)

But when we're working the **front**, they're reversed. The **right** edge of the chart is at the wearer's **left**, and the left edge of the chart is at the wearer's right. Think of the chart being held up below the wearer's **face**. (Note **front** and **face** both start with **f**.)

Decrease Placement

Throughout this chapter, I'll both say in the text and show in the charts that decreases are done "at the beginning of the row." Generally, we would do decreases at least one stitch from the edge so that the edge is smoother, which usually makes it easier to do the finishing, whether sewing seams or knitting up stitches for ribbings or other edge treatments.

Since we all vary on exactly where we prefer to put decreases (some in the edge itself, some one stitch from the edge, others two or even more stitches from the edge), "at the beginning of the row" will always mean "at your preferred location to do a decrease."

We Have to Handle Bind-Offs Correctly

There's one inescapable reality about knitting the vest: we have to work in rows, and we bind off at the beginning of a row.¹ That means that our vest's underarm bind-offs will be at the beginning of a public-side row for one armhole and at the beginning of a private-side row for the other armhole. Since one underarm will be one row higher than the other, our charts will need to reflect this fact.²

Because the vest has shaped shoulders, we bind off when we're working rows from the armhole edge toward the neck, so that the fabric edges slope upward to match the slant of our shoulders. Shoulder shaping, as with underarm shaping, will begin one row later on one shoulder than on the other shoulder.³

Changes for Mirror-Image Knitters

MIKs must chart written-out instructions according to the unwritten assumption that public-side rows are worked from right to left. That means that MIKs must first chart as though they were traditional knitters. As we saw in part one's "Decreases," MIKs must interpret and chart a "K2tog" in the instructions as a right-leaning decrease and an "SSK" (or "SKP" or similar) as a left-leaning decrease. They then swap the definitions of the decreases in the symbol key, but the decrease symbols shown in the chart don't change.

However, MIKs must make very slight row adjustments to the chart itself before they start working from it, as explained in this chapter's MIK supplement. Those adjustments are necessary because MIKs start all rows at the opposite end compared to traditional knitters.

Charting Choices

We'll use several general options for most of the charts.

Square Grid Cells

Since we're charting existing written-out instructions, we can use square-cell grid paper, which gives us more space to make the necessary marks.

If we want, or need, the chart to show the proper height compared to its width, we do all the same steps, but we use proportional grid paper. See the appendix "Designing by Charting" for creating grid paper that exactly matches your stitch and row gauges.

¹ This restriction assumes we're working the vest in the flat, not in the round with steeks.

² If we're using bulky yarn or working a color pattern, this one-row difference might be noticeable. Binding off at both ends a row is explained in the chapter "Optional Shaping Tweaks."

³ OK, yes, technically we don't have to bind off at all for either underarms or shoulders. We can just put the underarm stitches on holders, and we can short-row the shoulder shaping. But one complication at a time!

Grid Cells Are Knits

Because I'm lazy, my paper charts would use the grid cells themselves to represent the public-side knit stitches. That choice means I have to use extra lines at the edges of the chart to separate the chart's knit symbols from the surrounding grid.

Partial Charts

We have two options for how much of “The Basic Vest” will be charted.

- ☉ We could use very small grid cells to fit the width of the entire project on one sheet of grid paper.
- ☉ We could use larger grid cells and omit from the chart most of the stitches and rows not involved in the shaping.

Because our focus is on charting shaping, not vast areas of plain old stockinette, we'll create the charts using the second option. The final chart in each shaping area will show the chart with the project's full stitch count.

If we want to fit the project's entire row into a grid with small cells, we do all the steps shown, except that we would first mark off the full stitch count before we start, then draw all the shaping at both ends of the rows.

Underarm Shaping

To make “The Basic Vest” in the size small, we cast on ninety-one stitches and work in stockinette to the desired length to the underarm. Our general choices mean that we'll skip charting all that stockinette and go straight to the first bit of shaping.

The Bind-Offs

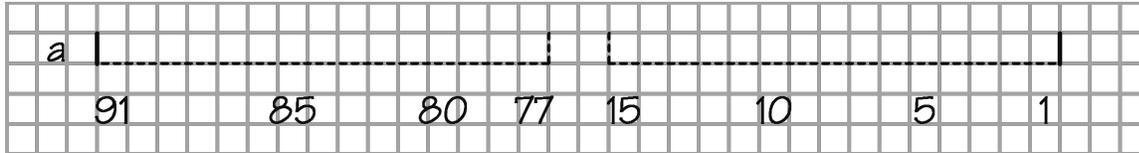
When we look at the written-out instructions for the size small, we see we will bind off six stitches at each underarm, then decrease away another seven stitches at both the right and left armholes for the underarm curves. So let's confine our chart to showing fifteen stitches at each edge. We'll add some stitch labels, just so we don't confuse ourselves.⁴

Set Up the Underarm Shaping Chart

According to “The Basic Vest” written-out instructions, we finish a private-side row, then turn to the public side to start the underarm shaping. We'll say that the first underarm shap-

⁴ In the interest of full disclosure, I managed to confuse myself royally, more than once, even with the stitch labels.

ing row is “row one,” which means the private-side row before it can be thought of as “underarm shaping foundation row A.”



Let’s look at some of the details on this initial chart.

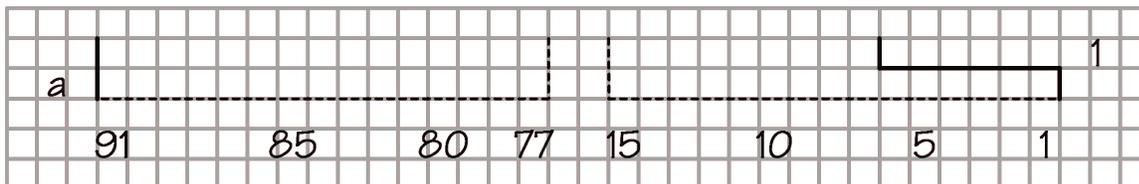
- ☉ Since the grid cells themselves represent public-side knit symbols, we need to draw vertical lines on both ends of each row to separate actual stitches from the surrounding grid.
- ☉ The dashed vertical lines are reminders that we’ve left stitches sixteen through seventy-six out of the chart, as shown by the stitch labels across the bottom of the grid.
- ☉ The dashed horizontal lines indicate where the underarm areas are connected to the rest of the fabric, which goes all the way down to the bottom edge.

Row One

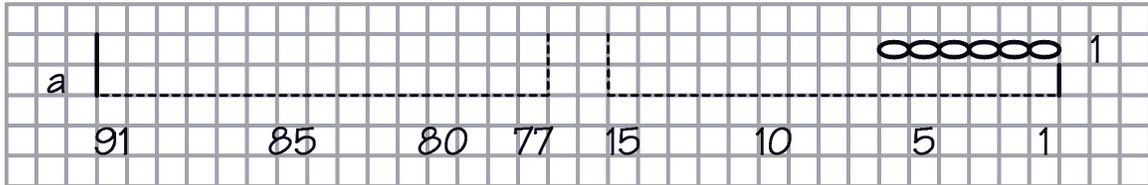
We can indicate bound-off stitches two ways:

- ☉ with a horizontal line below their grid cells
- ☉ with marks inside their grid cells

Since row one starts by binding off six stitches, then using the first option, we draw a horizontal line below them. We also draw a vertical line above its inner end to separate the first live stitch left after binding off from the rest of the grid. The other three vertical lines need to be extended upward through row one, and they remain straight since we work the rest of row one evenly.



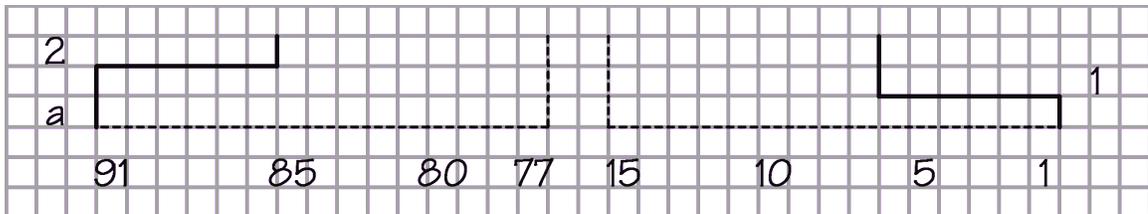
If we want to use the second option, we draw some kind of mark inside each grid cell, perhaps an oval shape to make us think of the stitch loops visible across the bind-off.



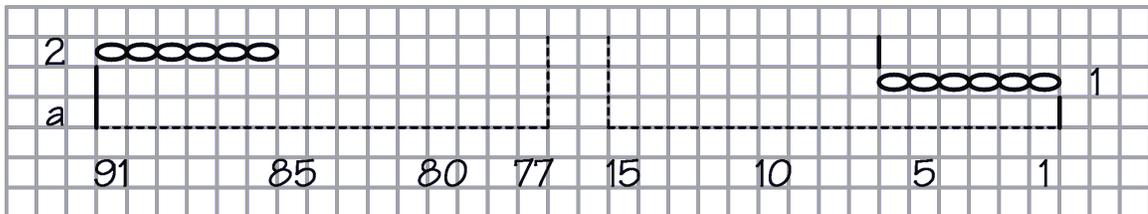
The ovals separate cells representing actual stitches (starting in stitch seven) from the surrounding grid, so we don't need a vertical line to their left, though we could of course add one if we want.

Row Two

At the beginning of the private-side row, we again bind off six stitches. We can draw a horizontal line, then add a vertical line at the inner end to separate the first live stitch from the grid. We extend the other vertical lines upward through row two, keeping all of them straight because we work the rest of row two evenly.



We could also use the same ovals to indicate the six stitches bound off at the beginning of row two.



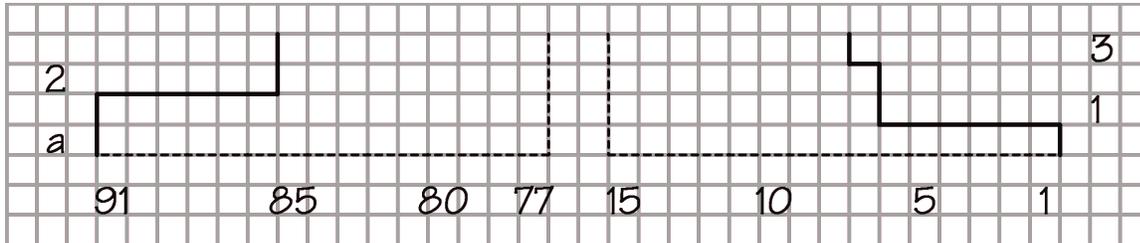
The vertical line between stitches six and seven shows that the last stitch of row two is what was originally stitch seven, and it separates that last stitch from the rest of the grid.

The Curves

Now we have to decrease several more stitches, one stitch at the beginning of the next fourteen rows, which means we decrease seven more stitches at each armhole edge of the vest.

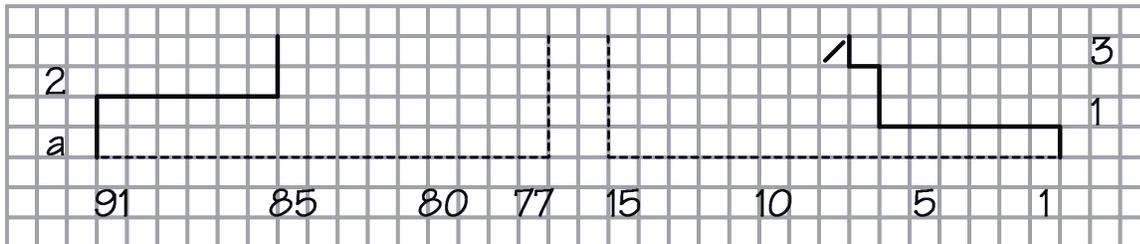
Row Three

We have to show that row three is shorter because of the decrease at the beginning of the row. When we draw the vertical line to separate the first public-side knit symbol from the grid, it must be one cell closer to the center of the row. We've added a horizontal line one cell wide to connect the two vertical lines on either side of stitch seven. They're optional, so we can omit them if we think they only clutter up the chart.



We can put an explicit decrease symbol at the beginning of the row as well, although the position of the vertical line alone shows us that we decrease.

Here, we're making the decrease symbol's slant point at the fabric edge so that the decrease will be mainly invisible.⁵

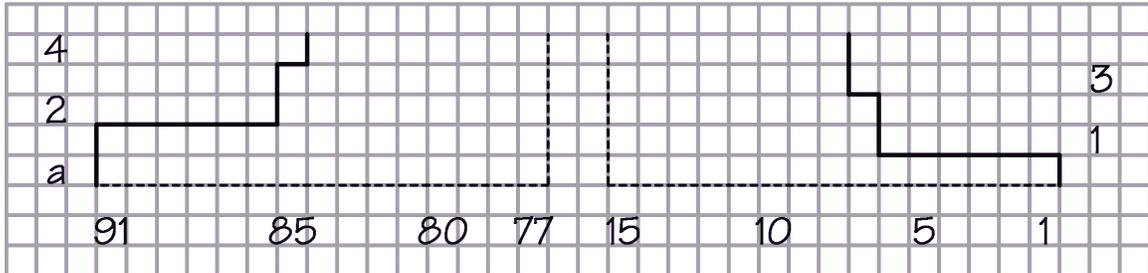


We extend the other vertical lines straight up through row three since we work the rest of the row evenly.

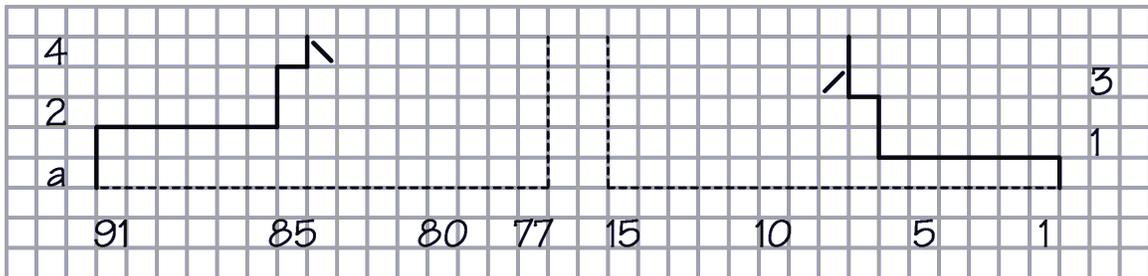
Row Four

At the beginning of row four, we decrease. From the public side's point of view, the decrease occurs at the left end of the row. We therefore draw the vertical line one cell closer to the center of the row, and we've drawn a horizontal line one grid cell wide to connect the ends of the vertical lines. In this first version, we've omitted the decrease symbols.

⁵ See part one's "Decreases" for details on prominent versus minimized decreases.



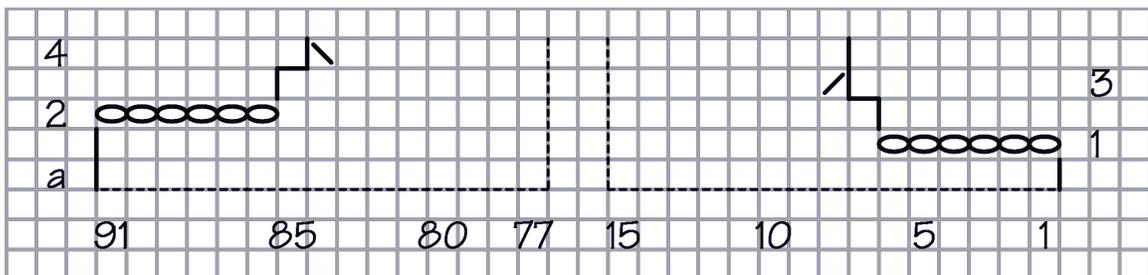
If we want to, we can also draw a decrease symbol. Note that since we have to do a decrease on the private side of stockinette, we have to use the correct purl directional decrease for what's charted as an SSK/SKP on the public side, which is an SSP/SPP.⁶



Since the left end of the row, shown by the vertical line, moves one cell toward the center, we know we need to do a decrease whether there's an explicit decrease symbol or not.

The dashed lines representing the stitches omitted from both charts grow upward by one grid row, as does the vertical line at the beginning of row three, since we work row four evenly all the way across to the final stitch on our source needle.

Let's see what the chart looks like if we switch it to use ovals for the stitches we bind off.



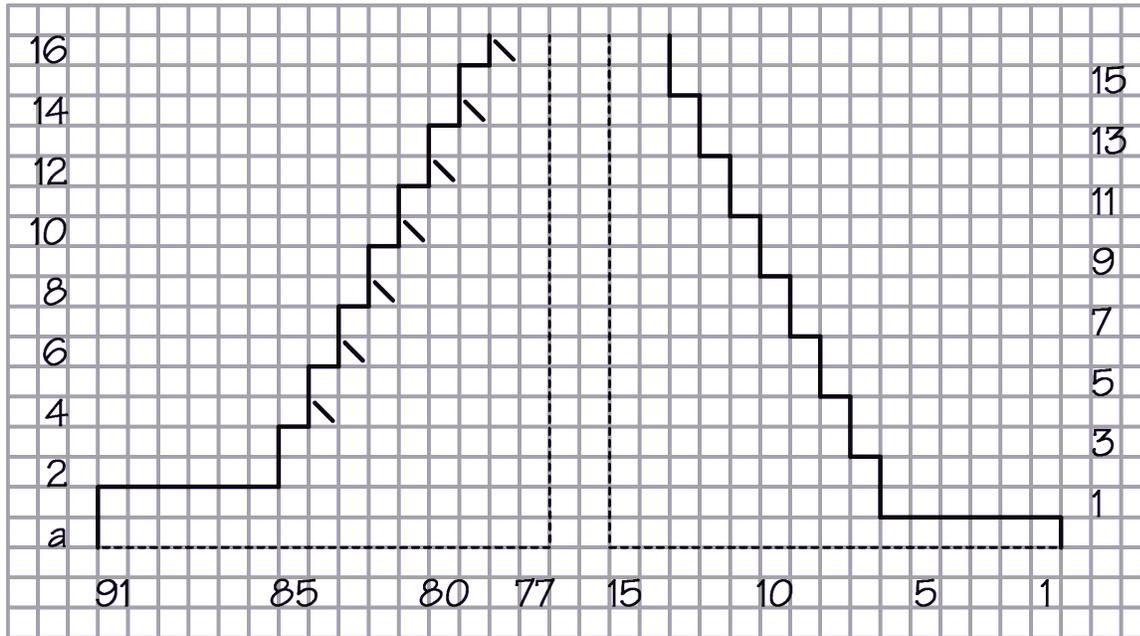
⁶ See the purl decreases section in "Decreases" for details on using the correct private-side purl decreases to get the desired lean on the public side of stockinette.

The Rest of the Underarm Shaping

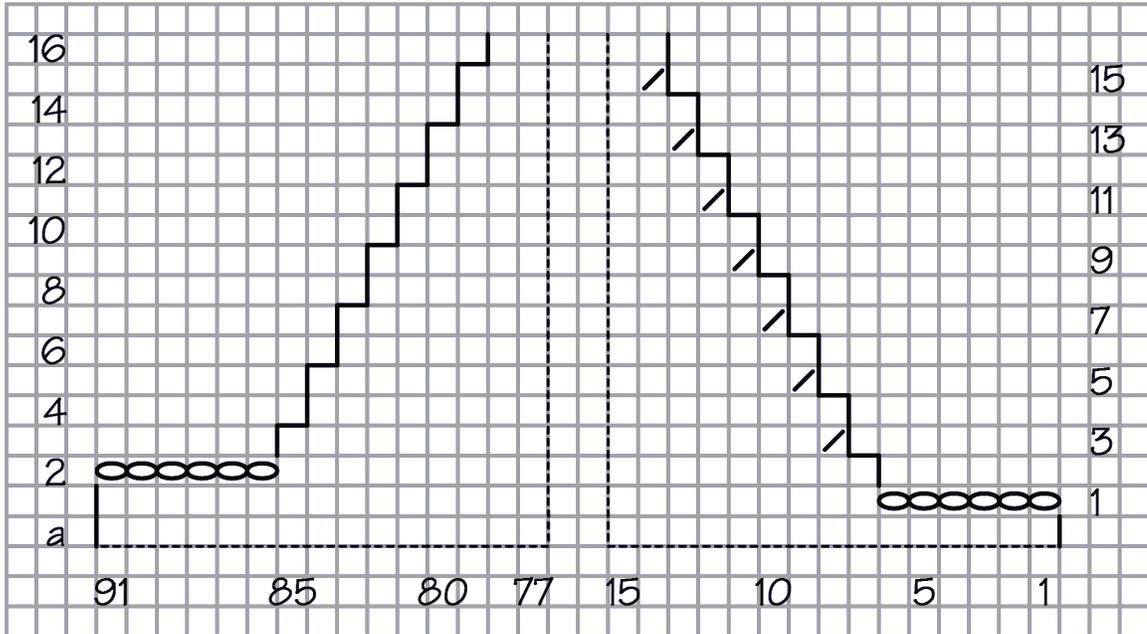
We would chart the remaining rows the same way, always moving the vertical boundary segment at the beginning of each row one grid cell toward the center of the row to represent the decreased stitch.

In the next two charts, one underarm curve shows the decrease symbols, and the other underarm does not, just to give us an idea of how we might prefer to chart.

We can show the bind-offs on the first two rows with horizontal lines



or with whatever mark we think best shows us that we bind off those stitches.



Interpreting the Chart

As we look over the chart of all the underarm shaping, the boundary lines show us what to do at both ends of each row, whether or not there are any special symbols.

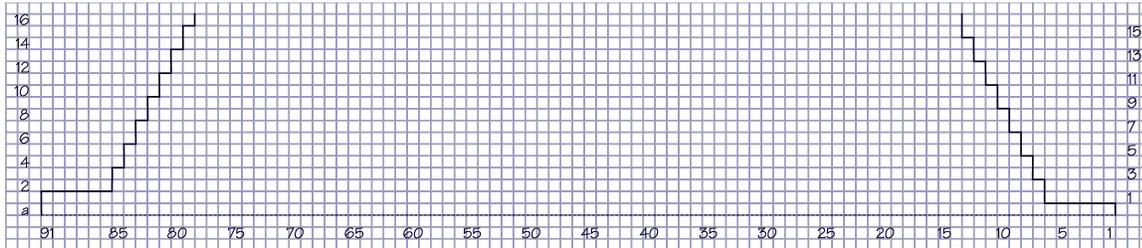
- ☉ When two or more grid cells at the beginning and/or end of a row have a horizontal line below them, we bind them off. We can draw our preferred bind-off mark inside those grid cells instead.
- ☉ If the vertical boundary line at either end of a row is one cell closer to the center of the chart than the boundary line at that end of the previous row, we decrease one stitch at that end.
- ☉ If the vertical boundary line at either end of a row is directly above the boundary line at that end of the previous row, then we work that end evenly, doing no shaping of any kind.

Both charts show that we bind off six stitches at the beginning of rows one and two, then decrease one stitch at the beginning of rows three through sixteen, which matches the written-out underarm instructions for “The Basic Vest” in the size small.

Even though we’ve temporarily omitted stitches sixteen through seventy-six (so we could use bigger grid cells), both parts of the chart have gone from the fifteen stitches shown at the beginning in row A to the two stitches that remain after decreasing thirteen stitches total at each armhole.

Full Chart of the Underarm Shaping

Since it's difficult to get a real sense of what's going on because all the plain stockinette is missing in the middle of the chart, let's look at the full chart with all those central stitches.



The full-width chart doesn't use bind-off and decrease symbols, and it needs only public-side knits because the vest is one-color stockinette. Since there are no shaping symbols, we must know how to interpret the boundary lines at the ends of the rows to see what shaping we need to do where.

We can see that we have decreased away thirteen stitches total at each end, leaving stitches fourteen through seventy-eight inclusive, which is sixty-five stitches. The instructions say that for the size small, we work the back evenly on sixty-five stitches after completing the underarm shaping, so numerically, at least, we've decreased properly.

In yarn, we would now work evenly to the design (or desired) armhole depth.

Working the Armhole Depth Correctly

The schematic in “The Basic Vest” shows the top of the shoulders unshaped for simplicity. But we do need to realize that for this vest, the shoulder lines will actually be on a slant upward from the outer edges of the shoulders to the neck, since we do a gradual binding-off of the shoulder stitches instead of binding off all of them on a single row (which of course is an equally valid choice).

Because of the shaped shoulders, the armhole depth really needs to be measured from the top of the underarm ribbing to the **lower** end of the shoulder line, which is at the armhole edge.

Even more critically, we need to know if the designed underarm height includes the armhole ribbing or not. Since the ribbing will take up some of the vertical armhole opening, we have to work the main fabric of the vest **longer** than the finished armhole depth by the height of the armhole ribbing.⁷

The vest's ribbing is one inch tall per the written-out instructions in “The Basic Vest.”

⁷ This difference is explained in the appendix “Garment Design Details.”

Since the finished armhole depth for the size small is eight inches, we have to work **nine** inches past the underarm bind-off before we begin the shoulder shaping. When the armhole ribbing makes the armhole one inch shorter, then we get the correct finished armhole depth of eight inches for the size small.

For garments with sleeves, we probably just measure the armhole depth from the beginning of the underarm shaping to the beginning of the shoulder shaping, period. We always need to check the project’s schematics and measurements, then work accordingly.

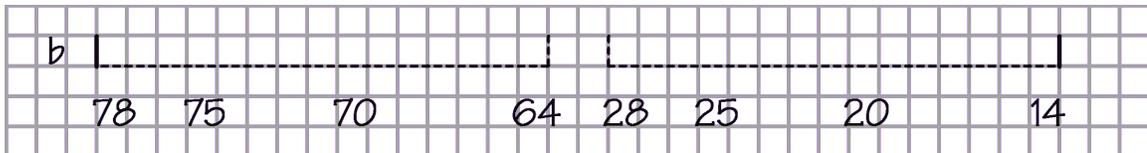
Shoulder Shaping

The shoulder shaping for the size small is very straightforward. We bind off three stitches at the beginning of eight consecutive rows, starting with a public-side row.

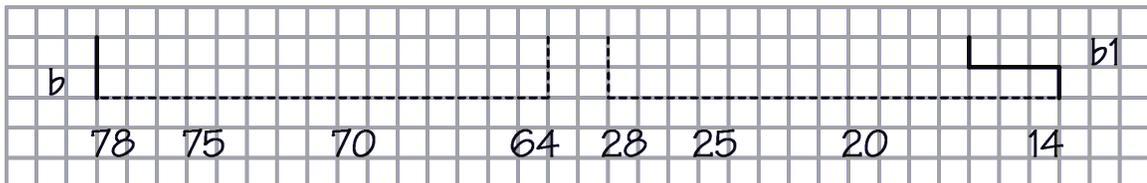
Let’s do the same thing we did to chart the underarm decreases, labeling the last row before the shoulder shaping starts as a “foundation row,” since the actual project row number would depend on our row gauge and the armhole depth we need. If we use “foundation row B” as the last row before shoulder shaping begins, we can use “B1” through “B8” as the shoulder shaping row numbers.

We’ll concentrate on fifteen stitches at each shoulder, so we’ll have three stitches remaining at each end when we’ve charted all the bound-off stitches. Each grid cell still represents a public-side knit stitch.

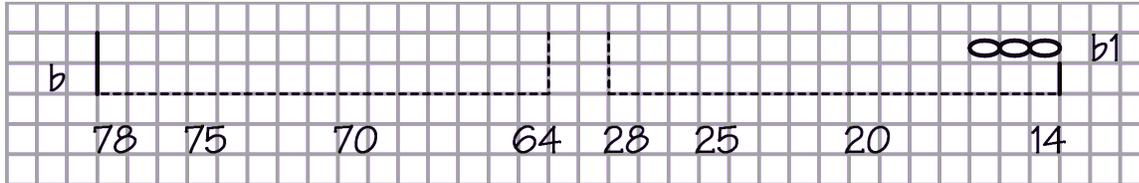
Solid vertical lines separate the first and last stitches from the surrounding grid, and dashed vertical lines indicate which stitches aren’t shown in the chart (though of course we would have all those stitches on our needles). The dashed horizontal lines show where the shoulder shaping connects to the fabric below it.



We mark the chart exactly the same way we did for the underarm bind-offs, except that here at the shoulder, we bind off only three stitches at the beginning of row B1.

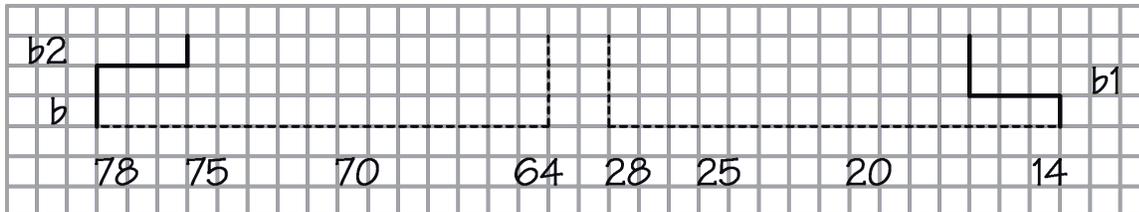


If we prefer, we could use some special mark within the grid cells, like the oval we used before, instead of drawing a line below all the cells of the stitches we bind off.

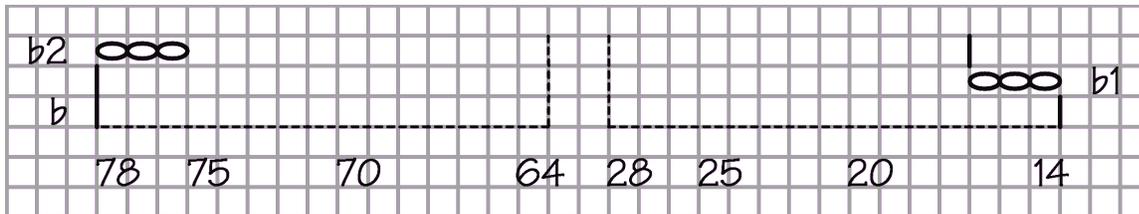


Whether we use a horizontal line below or some kind of symbol within the three grid cells at the beginning of row B1, we extend the other three lines straight up through the row because we work the rest of it evenly.

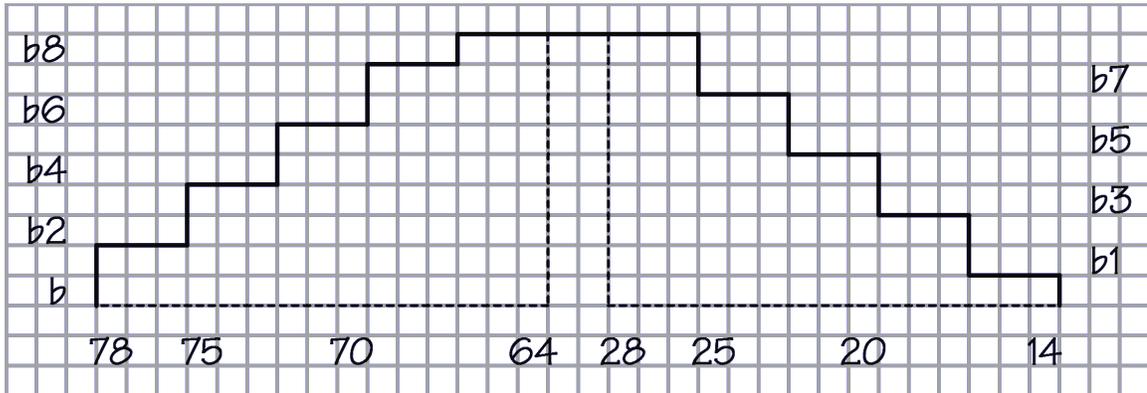
We turn to the private side, then bind off three stitches at the beginning of row B2. The vertical line between stitches seventy-five and seventy-six forms the boundary between the first live stitch of row B2 and the rest of the grid. The other vertical lines are extended straight up, since we work the rest of row B2 evenly.



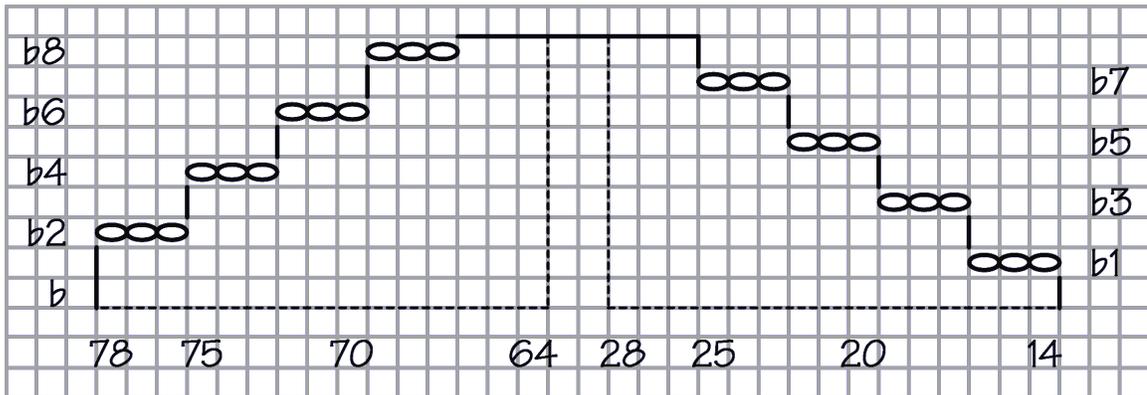
If we use ovals at the beginning of rows B1 and B2, they will separate the cells that actually represent public-side knit stitches from the surrounding grid. But at the end of row B2, we need a vertical line to separate its last stitch from the grid.



We draw rows B3 through B8 the same way as rows B1 and B2, whether we use horizontal lines below the grid cells to represent the stitches we bind off



or draw a mark inside those cells.

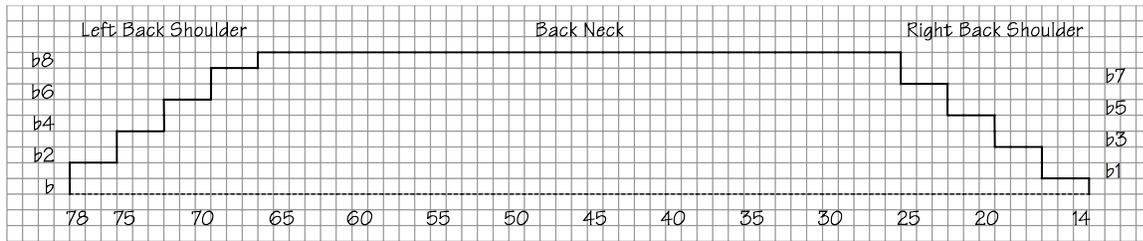


Forty-one stitches remain, indicated by the horizontal line above stitches twenty-six through sixty-six inclusive on row B8 (which are public-side knits in our plain stockinette vest). They match the number of back neck stitches in the written-out instructions, which tells us to put them on a holder.⁸

Full Chart of the Shoulder Shaping

Let's put all the central stitches in the chart so we can get a better sense of what the final eight rows of the vest back will look like.

⁸ Depending on our preferences, we could bind off the remaining back neck stitches instead of putting them on a holder, then adjust the finishing accordingly.



It's Not as Bad as It Looks

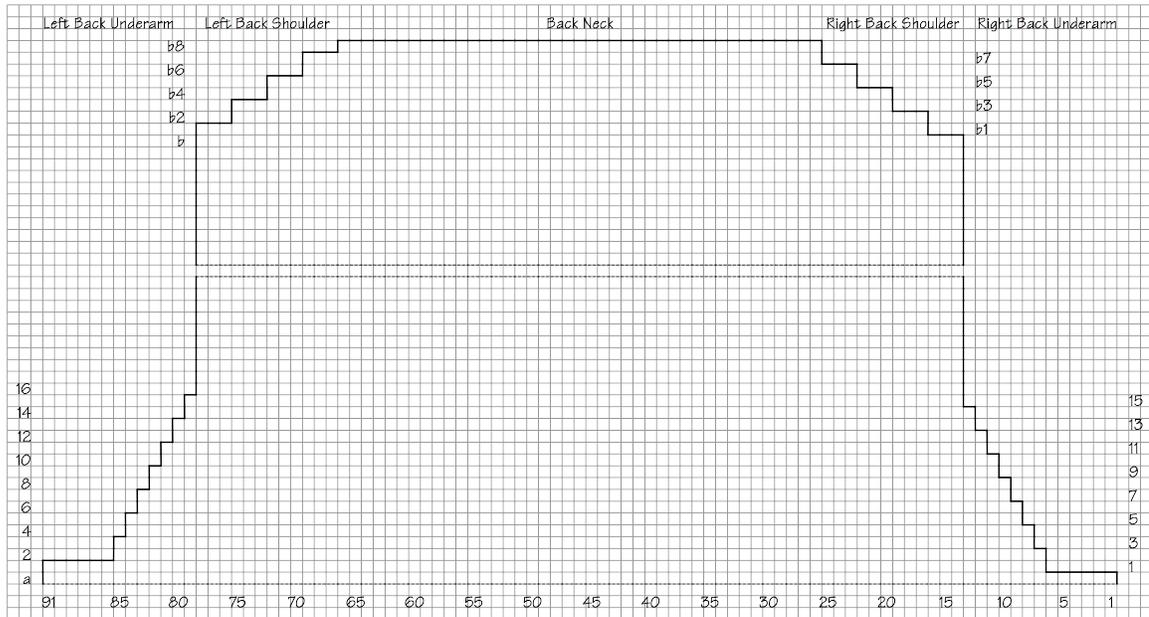
Do the two-row-tall “stairsteps” at the underarm curves and shoulder bind-offs seem awkward? They do look a little bit sharp in a chart; there’s no denying that. The result in yarn isn’t quite so, well, angular, and once we’ve joined the shoulders and added the ribbing, all the shaping will look smooth.

Alternative Shoulder Shaping

We might, however, prefer to smooth out the shoulder shaping as much as possible while we’re knitting the back (and, later, the front). We have several options, and they can be charted as well, as shown in the chapter “Optional Shaping Tweaks.”

Total Shaping of the Vest Back

Now that we’ve charted the shaping of the underarms and shoulders, let’s look at a chart showing all the shaping.



The gaps in the vertical boundary lines running up the edges of the armholes and the dashed horizontal lines connecting them remind us that we need to determine the total number of armhole rows to work so that we have the proper armhole depth before we start the shoulder shaping.

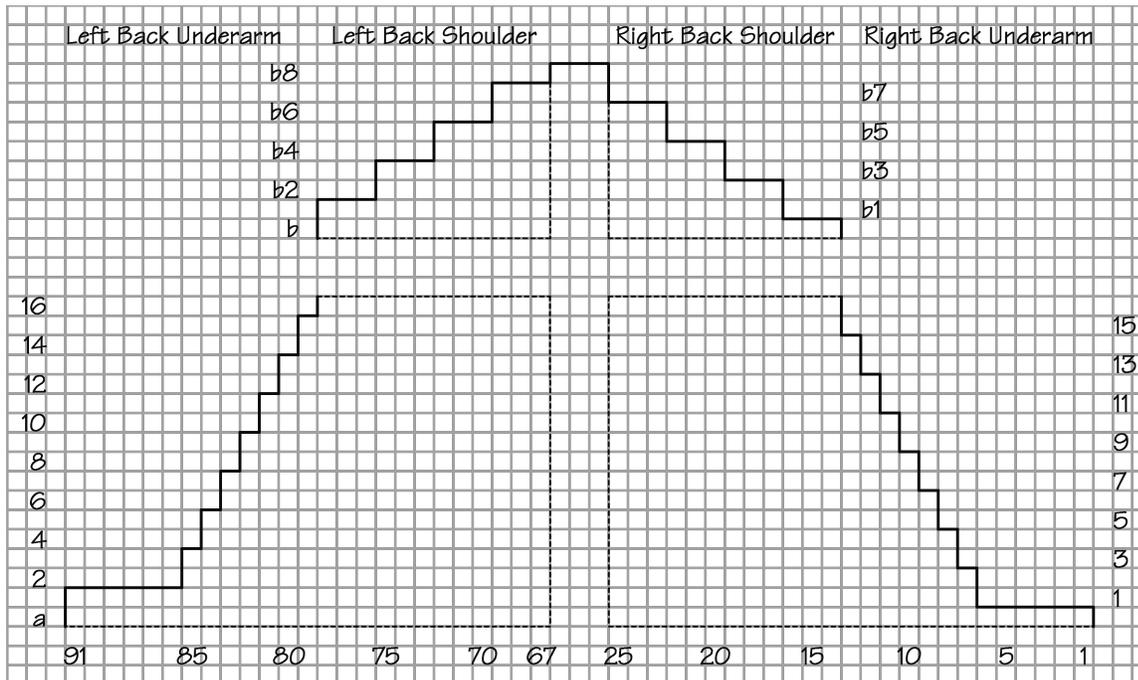
If we look at a vest (or a sweater with set-in sleeves), whether it’s hand-knit or commercially made, we’ll probably see this general shape when we look at the back: horizontal lines at both underarms that curve to become vertical lines along the armhole edges, finishing with diagonal shoulder lines moving upwards from the armhole edges to the sides of the neck (or, for unshaped shoulders, a straight line all the way across the top).

Succinct Charts

Since there’s no real point in showing all that plain stockinette, we can remove quite a lot of the public-side knit symbols without losing any of the shaping information.

If we put each shaping area on its own vertical strip of grid paper, exactly the same way we did for part one’s Aran sampler, it’s easy to remove the parts we don’t really need (and equally easy to put them back in if we change our minds).

Here’s the vest back chart with the central stitches and unshaped rows removed.



Let's look at what this chart is telling us.

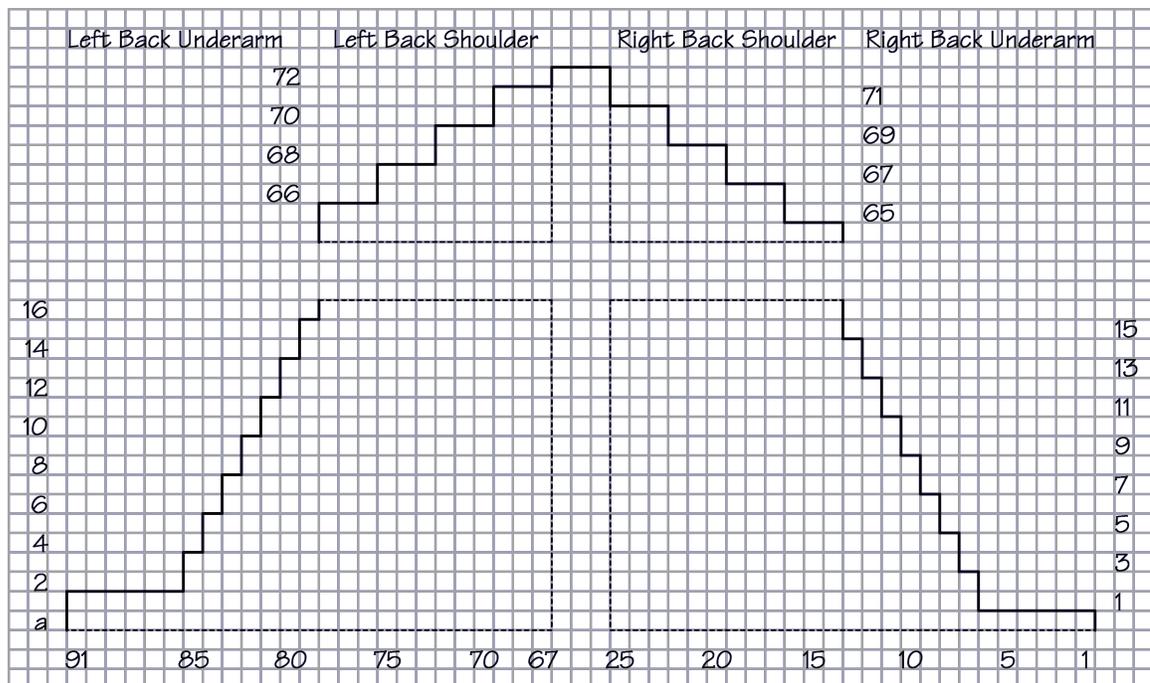
- ☉ The bending boundary lines indicate where rows get shorter, so we have omitted the decrease symbols. Those of us who want explicit bind-off and/or decrease symbols can use them.
- ☉ The dashed lines indicate where stitches and rows have been omitted, because they are not affected by the shaping.
 - ✓ The dashed vertical lines indicate that stitches twenty-six through sixty-six have been omitted from the chart, though they would of course be on our needles.
 - ✓ Between the dashed horizontal lines would be enough rows to make row B1 be at the proper distance past row one for the armhole depth we need.
- ☉ The vertical line in row B8 on the right edge of stitch sixty-seven separates the first live stitch on row B8 from the rest of the grid. The solid vertical line to the left of stitch twenty-five, which crosses rows B7 and B8, shows us that the last stitch we'll work on row B8 is stitch twenty-six. Row B8 therefore finishes with live stitches sixty-six through twenty-six inclusive, which matches the forty-one stitches we're supposed to have at the back neck according to "The Basic Vest."

Let's Use Some Real Row Numbers

Suppose that for the size small, we need to work the exact nine inches of underarm depth indicated in the written-out instructions for “The Basic Vest.” We can use as our row gauge swatch the entire back before the underarm shaping starts. Let’s say we’re getting seven rows per inch. Between the underarm bind-off and the start of the shoulder shaping, we therefore need to work evenly nine inches times seven rows per inch, for a total of sixty-three rows. If we like, we can bump that to sixty-four rows so we can start the shoulder shaping on a public-side row. The rest of the charts use this optional convenience.⁹

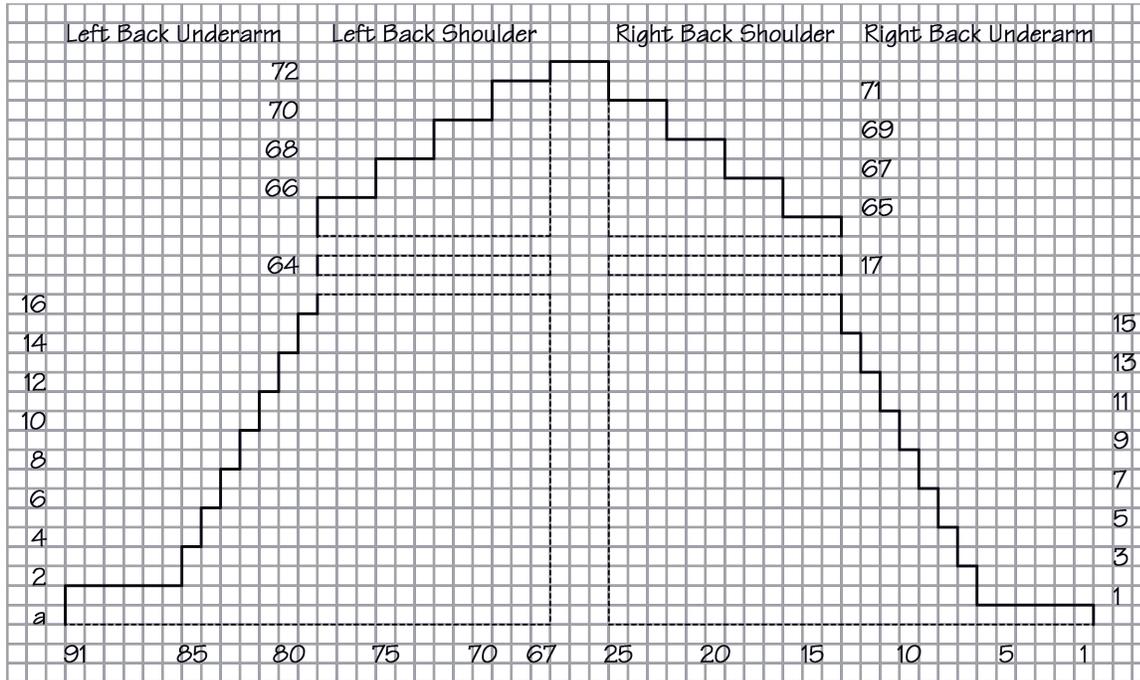
So we would work the sixteen charted rows for the underarm shaping, then work an additional forty-eight rows on the sixty-five stitches we have left. Those rows would be numbered seventeen through sixty-four inclusive if we put them all in the shaping chart.

When we turn at the end of row sixty-four to begin the shoulder shaping on the public-side row, we see that we do the eight rows of shoulder shaping on rows sixty-five through seventy-two inclusive.



We could indicate explicitly the rows worked between the two shaping areas.

⁹ My brain greatly prefers to start such major project milestones on the public side if it’s at all possible. In worsted or fingering, the extra row will make no difference. If we’re working with chunky yarn or using a color pattern, we need to double-check that the extra row won’t cause any problems.



The double-numbered row between the end of the underarm shaping and the beginning of the shoulder shaping indicates that we work stitches fourteen through seventy-eight evenly on rows seventeen through sixty-four.

Front Neck Shaping

Sweater patterns often start with the back because it typically has shaping only for the armholes and shoulders. Then we work the front with all the same shaping we did on the back while “at the same time” doing the front neck shaping.¹⁰

Keeping track of simultaneous shaping at two armholes, two sides of the front neck, and two shoulders can be tricky. Charting the shaping makes it clear where to do all of it.

Add the Front Neck to the Back’s Chart

In many cases, all our hard work charting the back’s shaping becomes our starting point for charting the front. For our sample vest, that big section of plain stockinette that we just re-

¹⁰ Some garments do have back neck shaping as well, which we would chart with the same techniques we’re about to discuss for charting the front neck. We’ll see back neck shaping in the chapter “One Chart, Six Sizes.”

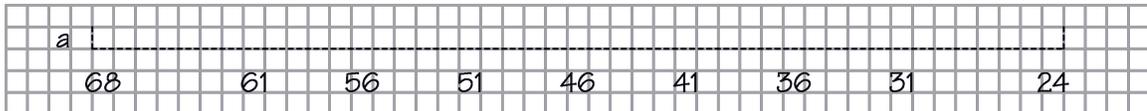
moved from the back’s complete shaping chart is where we’re going to wind up putting the front neck shaping.

Set Up the Front Neck Shaping Chart

The size small is ninety-one stitches wide, so the very bottom of the V will be in stitch forty-six.¹¹ The written-out instructions tell us that we need to decrease twenty stitches on each side of the V’s single dead-center stitch, so we need to show at least forty-one stitches of the center front.

We’re also supposed to start the V-neck and the armhole shaping on the same row, so the bottom row in the front neck chart will be the underarm shaping foundation row A, except that we need to focus on the central stitches instead of those at the ends of the rows. Out of the central forty-five stitches shown, two stitches will remain on each end when we’re done charting the V-neck.

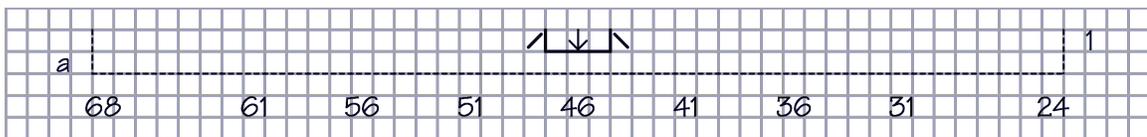
Since stitch forty-six is the dead-center stitch of the V-neck, we’ll label the stitches relative to it.



The dashed lines show where the rest of the front’s fabric joins to the neck shaping.

Row One

We’re supposed to put the center stitch on a holder, and we need to decrease one stitch on each side of it. We will want to mirror-image the decreases, and we have complete freedom to decide which one to do on each edge. Since we know that we’ll get the most invisible decrease if the decrease symbol’s slant points at the diagonal edge being formed, we’ll work a left-leaning decrease on the left neck edge and a right-leaning decrease on the right neck edge. A down arrow will indicate the center stitch is put on a holder. The neckline boundaries start right on row one, separating the two sides of the neck from the center stitch.



The symbols at the center of row one indicate that on the first row of the underarm

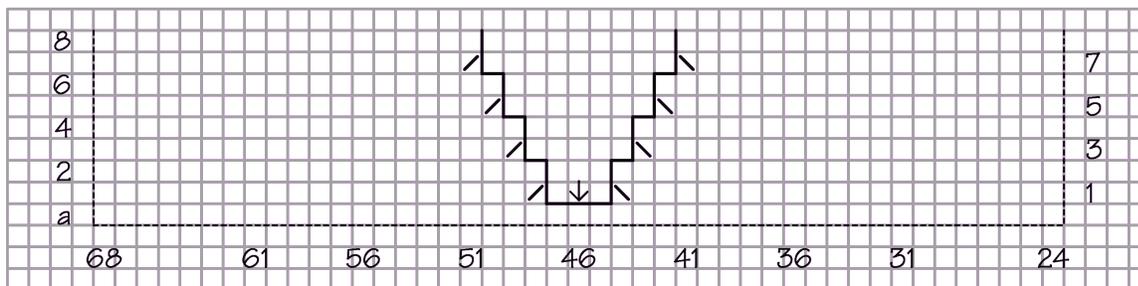
¹¹ See issue one in the appendix “Garment Design Details.”

shaping, we need to do a few more knitting operations in addition to the underarm shaping we've already charted.

- ☉ We decrease one stitch on each side of the front's dead-center stitch forty-six, working the left-leaning decrease on stitches forty-four and forty-five and the right-leaning decrease on stitches forty-seven and forty-eight (but with different balls of yarn).
- ☉ We put the front's dead-center stitch on a holder so it's out of the way until we work the neck ribbing in the finishing.

Three More Decrease Rows

We're supposed to work the decreases at both neck edges on public-side rows while working the private-side rows evenly, so the first four decreases on each side will be charted like this:

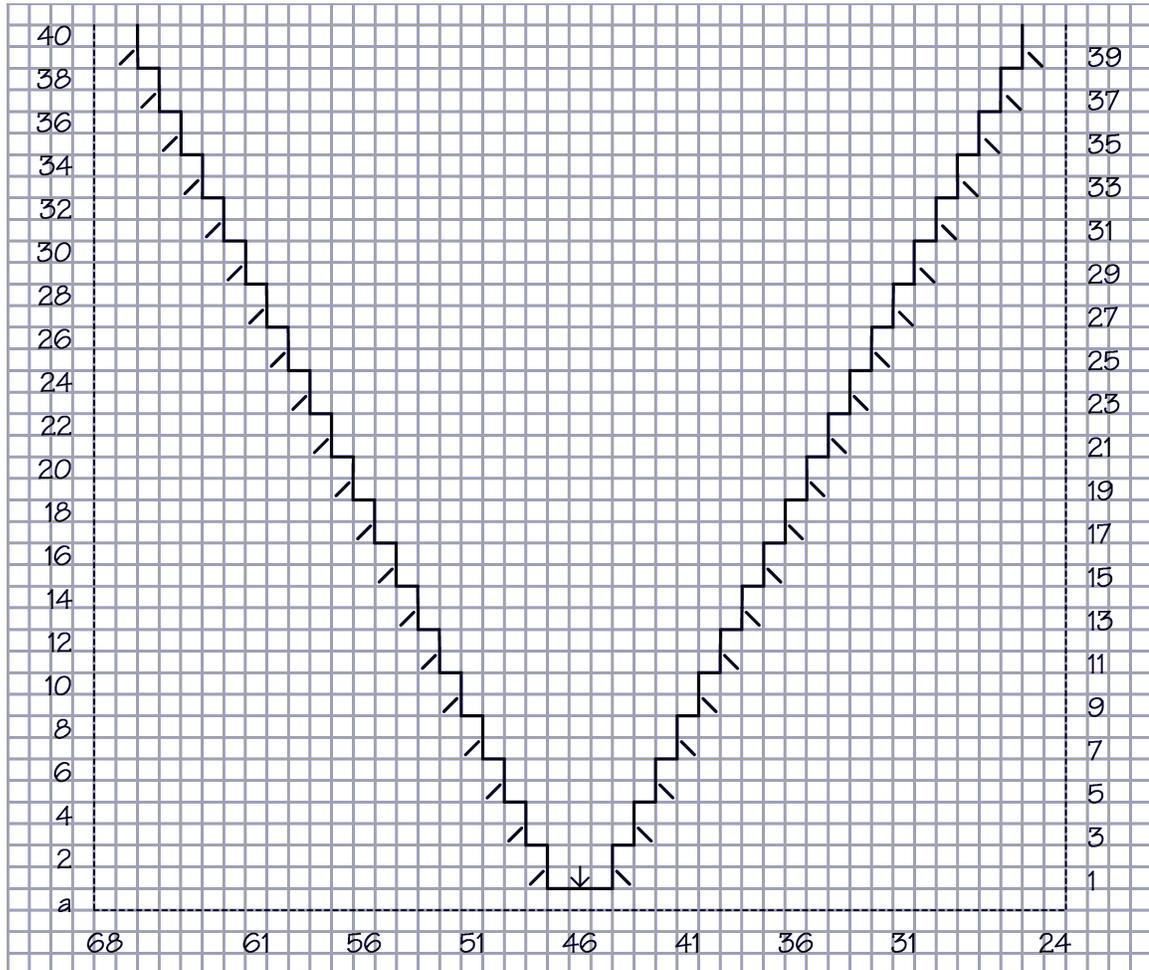


Note that the vertical line on each neck edge moves outward by one grid cell on every public-side row. That movement indicates that we need to do decreases on both neck edges on every public-side row.

Some of us might omit the decrease symbols, because they make the chart too cluttered. The bending boundary lines by themselves show the loss of a neck edge stitch every other row, so the extra marks are truly optional. Fortunately, those of us who like a belt **and** suspenders can use them.

The Complete V-Neck Chart

The entire V-neck chart is quite tall, because we decrease twenty stitches on each side but only on every other row. That means we need forty rows (well, technically thirty-nine) to show all the decreases.



Stitches twenty-six through sixty-six have been decreased away to form the V-neck, except for the center stitch at the very bottom, which we put on a holder. That stitch will be the center of the neck ribbing we’ll add in the finishing.

Total Shaping of the Vest Front

If we combine this partial chart with the back’s underarm and shoulder shapings, we can see exactly how—and where—all of the front’s shaping will be worked.

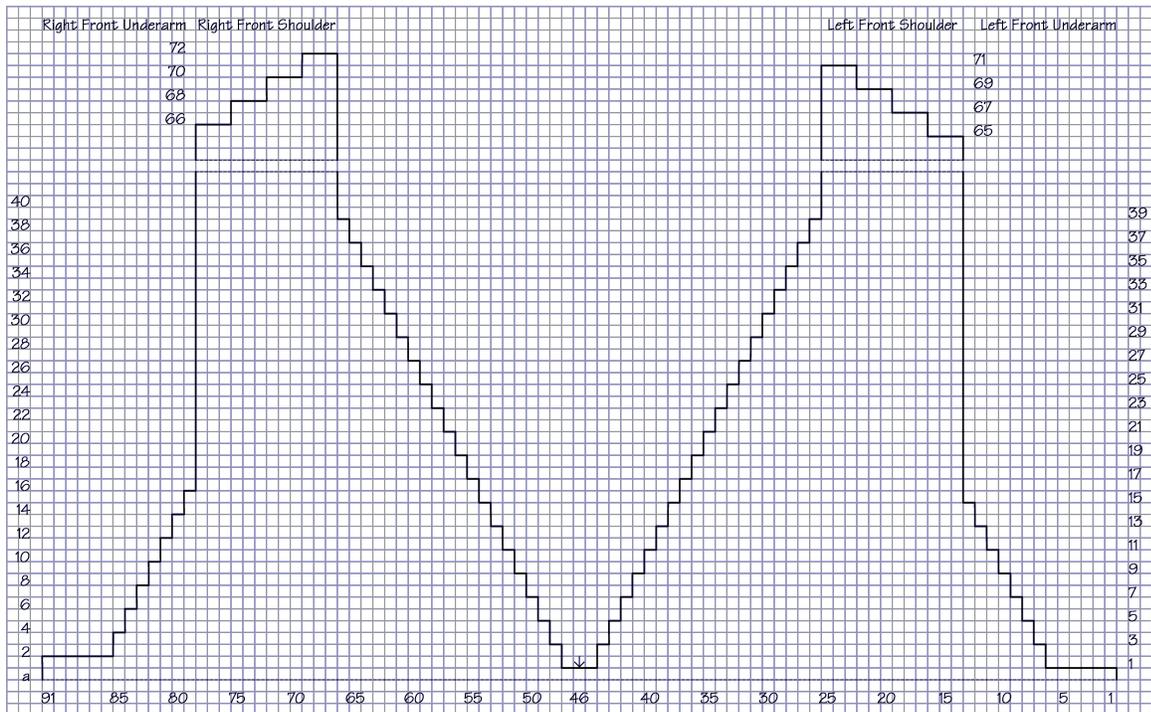
We need forty (technically thirty-nine) rows to complete the V-neck while “at the same time” doing the underarm shaping on the first sixteen rows. When we finish the V-neck shaping, we’ll have to work evenly until we’ve done the same number of **total** rows on each

of the front necks as we did on the back between the underarm bind-offs and the start of the shoulder shaping.

The Front with the Same Real Row Numbers

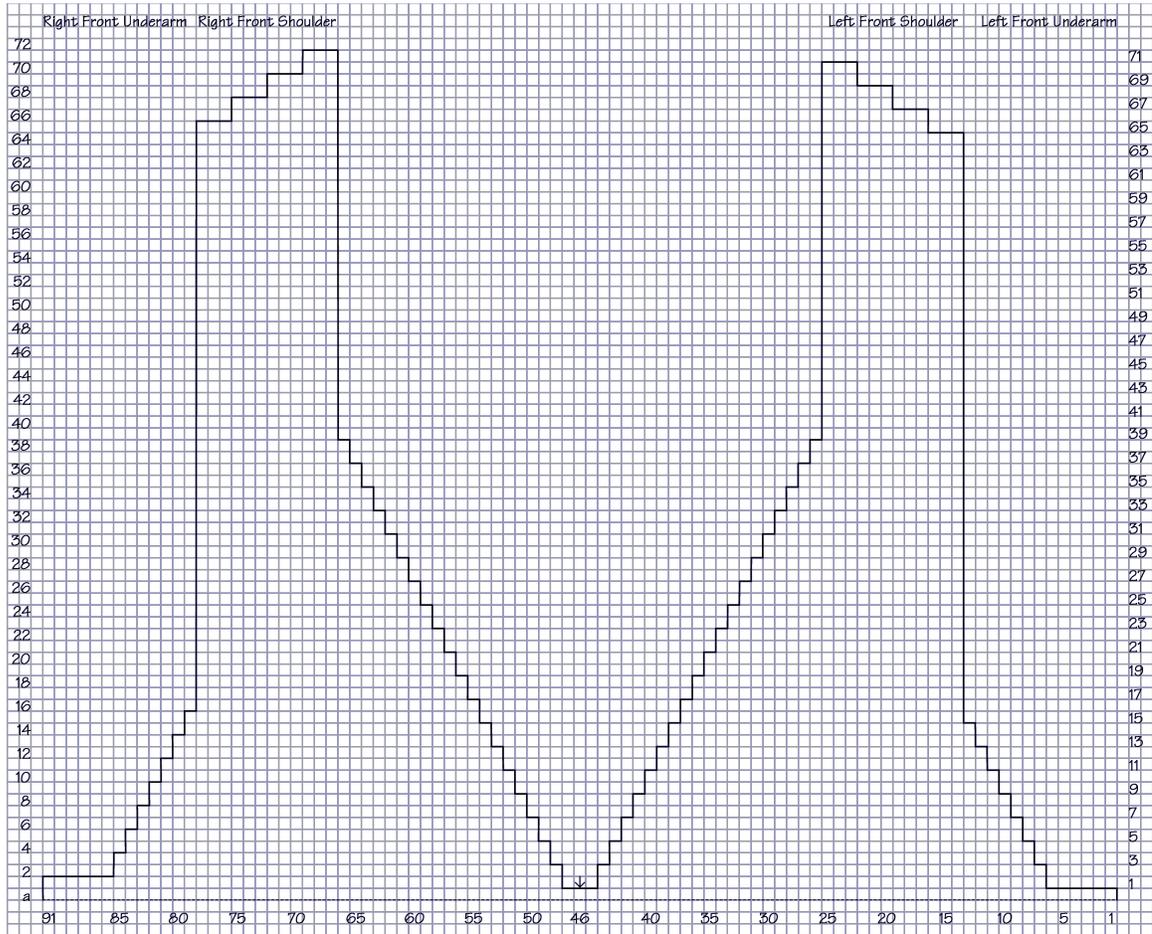
On the back, we figured out the row numbers of all the shaping rows based on the main fabric’s nine-inch underarm depth and a working gauge of seven rows per inch. We saw that we started the shoulder shaping on row sixty-five, after starting the underarm shaping on what we called row one. Let’s put those numbers in the front’s chart as well.

Remember that charts for a garment’s front and back reverse which side of the wearer’s body is in which half of the chart. Those differences are reflected in the labels at the top of both charts.



After the V-Neck Is Done

Since we work thirty-two (thirty-three on the right front shoulder) rows (rows forty through seventy-one/seventy-two inclusive) after we complete the V-neck shaping, then at our working gauge of seven rows per inch, we’ll have a vertical edge about 4.6 inches tall (thirty-two rows divided by seven rows per inch) between the final decreases on the V-neck and the final rows of the front shoulders.



If we want the V’s diagonal edges go all the way up to the top of the shoulder shaping (that is, to rows seventy-one/seventy-two), we have to change which rows have neckline decreases. Several possibilities are explained in “Optional Shaping Tweaks.”¹²

Working Both Sides of the Front Neck

Once we do the split for the V-neck, we have two choices:

- ☉ Work both front necks at the same time with separate balls of yarn.
- ☉ Finish one front neck, then work the other one.

Let’s not get confused as we do the front neckline and shoulder shaping.

¹² If we remove the front neck shaping boundaries and draw a horizontal line above row seventy-two from stitches twenty-six through sixty-six inclusive, we would have the vest back’s entire shaping chart.

Front Neckline Shaping

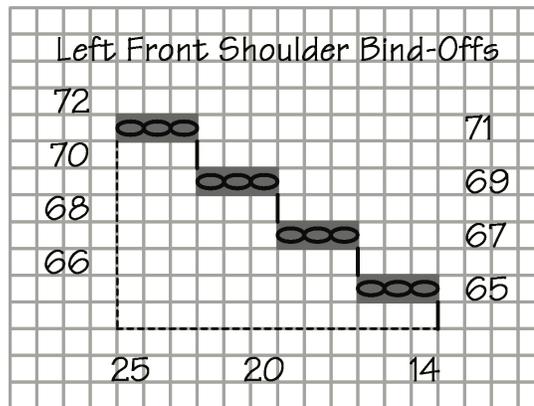
After we decrease at the end of the left front neck's row one, we have to decide how we'll finish working the front. Will we turn and work back to the left armhole, or will we join a second ball of yarn to work the right front neck simultaneously?

If we choose to finish the left front neck by itself, then we will probably want to put the right front neck stitches on a holder or spare needle.

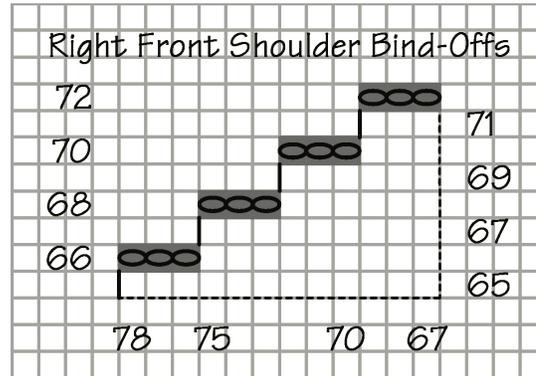
Front Shoulder Shaping

On each shoulder we'll have to work rows sixty-five through seventy-two (technically, row seventy-one on the left front), but unlike the back's shoulder shaping, we'll **work evenly every other row on both front shoulders**.

For the left front shoulder (stitches fourteen through twenty-five), we'll bind off at the beginning of public-side rows sixty-five, sixty-seven, sixty-nine, and seventy-one



but we'll work evenly across all the stitches on private-side rows sixty-six, sixty-eight, and seventy. When we bind off three stitches at the beginning of row seventy-one, we finish the left front shoulder, so it doesn't have a row seventy-two.



Charting in Pieces

Before we started charting the vest back, we had to decide how big we wanted the cells of the grid paper to be. We could use

- ☉ cells small enough that the entire width of the back would fit on one sheet
- ☉ larger cells but omit all the stitches and rows between the shaping areas

Let's discuss some additional details of each option.

Option 1: Small-Cell Grid Paper

If we can fit the entire width of the project on one sheet of paper, then we can easily draw the front neck between the underarm shaping. We would start near the bottom of the page, drawing a horizontal line the width of the project, leaving a grid row or two below it if we want to add stitch labels to the chart.

If we use proportional grid paper, the grid rows may shrink enough vertically to allow us to get all the shaping on a single sheet.

Chart the Shaping in Needles-and-Yarn Order

Since the front neck shaping begins before we finish the underarm shaping, it probably makes the most sense to chart the underarm shaping, skip to and chart the front neck, then finally chart the shoulder shaping. That way we may have enough room vertically to fit all the shaping on a single sheet of paper without having to erase and re-draw the shoulder rows. We may or may not have, though, enough grid rows to put the shoulder shaping where it will actually be in the project, especially if we use square-cell grid paper.

If the front neck shaping starts after the underarm shaping is complete, we can leave one or two empty grid rows between it and the beginning of the neck shaping. On a propor-

tional grid, we might be able to show all the unshaped rows we'll have to work between both areas, should we want to do so.

If the Chart Doesn't Fit on One Sheet

If we don't have enough space to include the shoulder shaping on the same sheet of grid paper with the underarm and front neck shaping, it's not a big deal. When we're working with needles and yarn, we follow however much of the chart we could fit on that first sheet, then switch to the next sheet to finish the front neck. If we can't fit all of the front neck shaping on the second sheet, we finish it (hopefully!) on the third sheet, and the shoulder shaping would be the last or, more accurately, highest area on the final sheet.

Option 2: Large-Cell Grid Paper

In the succinct charts, we were careful from the very beginning to chart each of the shaping areas in perfect alignment with the others. But we wouldn't have to be so exact. We could draw each area on a separate scrap of paper or in different areas of a full sheet, completely disregarding any alignment that would eventually be required in needles and yarn.

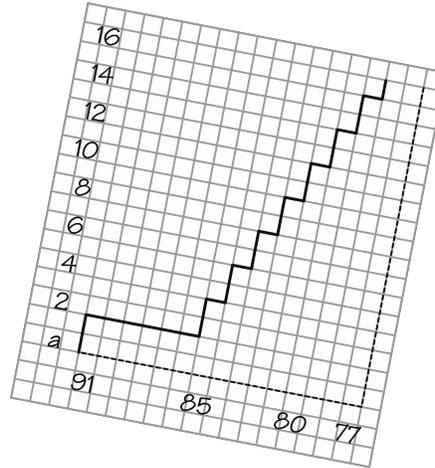
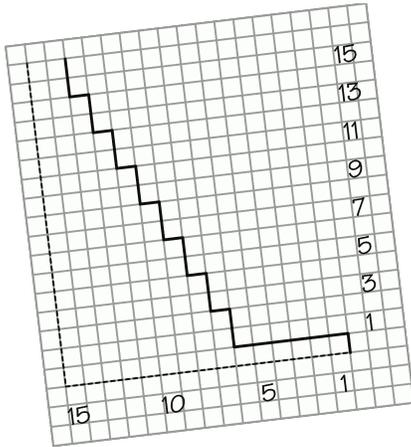
Position the Pieces

Once we've charted each shaping area, we trim its edges to make aligning the various pieces easier. We align the front neck with the underarm and/or shoulder shaping, depending on the neck style.

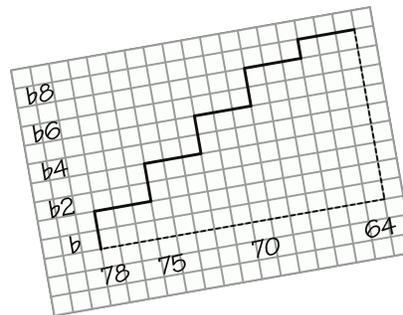
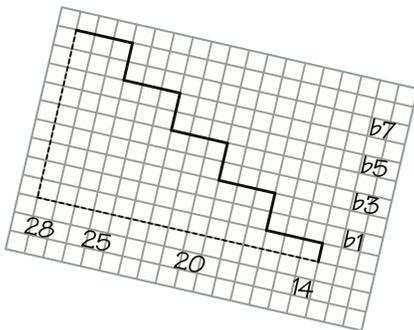
"The Basic Vest" happened to start the front neck shaping while we're still doing the underarm shaping. Since we'll have to keep track of what's happening at the two underarms and both sides of the front neck at the same time, we will definitely want to align those three pieces in the completed chart. Projects with other types of neck shaping, though, may need to align the neck rows with the shoulder rows instead.

We assemble the pieces together in a type of jigsaw puzzle. We'll need an extra sheet of grid paper with cells the same size as what we charted all the shaping with, unless we don't care that plain paper shows between the scraps.

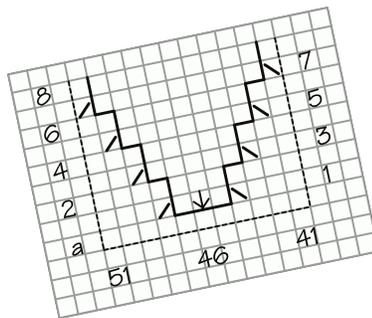
Here are the two bits of underarm shaping



and both shoulders.

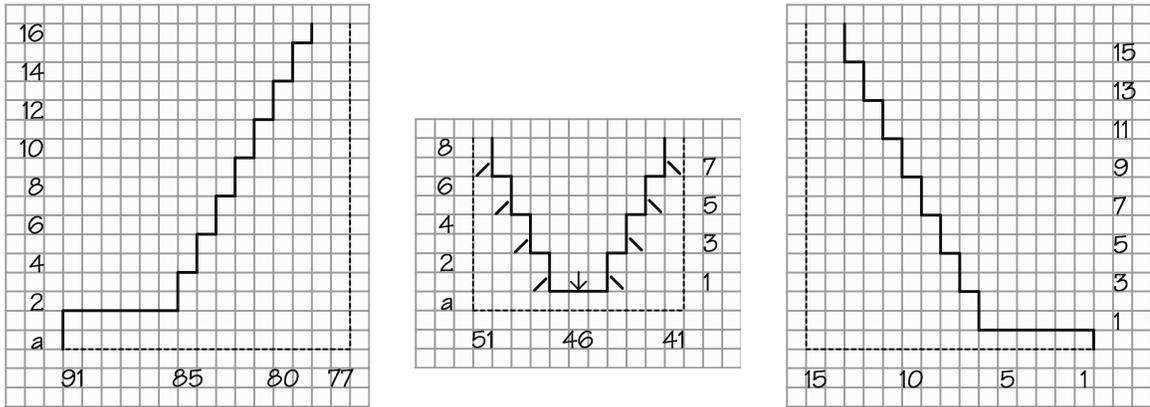


To minimize the number of pages here in the book, we'll use only the first eight rows of the front neck chart.

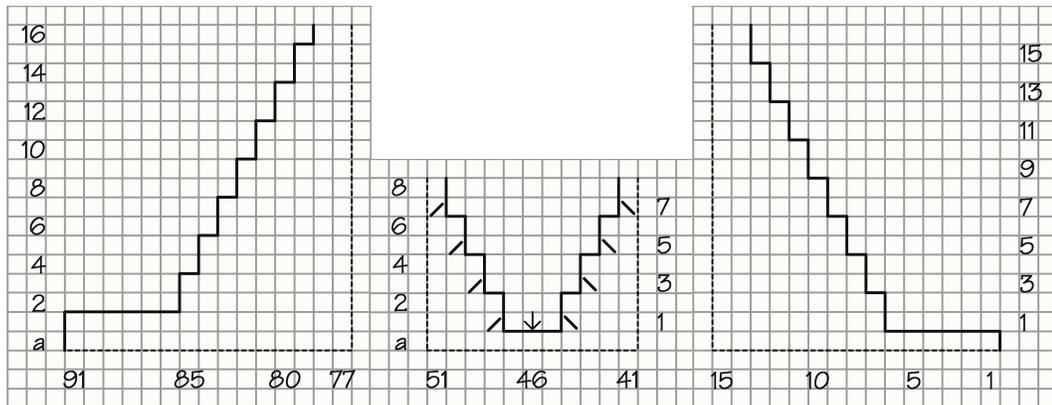


Now we have to start aligning. Since we were careful to include at least one set of row numbers on all five pieces, we can align them quite easily. If we don't have any row numbers at all on a piece, we'll need to refer back to the written-out instructions to add them.

Since we start the front neck before we finish the underarms, we need to work with those pieces first. We put the three pieces in the correct left-to-right order and straighten them up



then use the row numbers on each piece to align them properly.



We now tape those three pieces to one another or to the full sheet of paper. If the scrap here had the entire front neck shaping, we would do the positioning and aligning the exact same way.

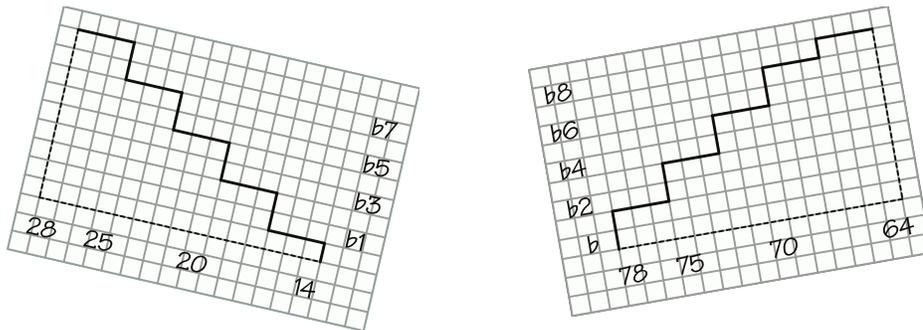
Note that we should put the tape on the **back** side of the pieces if it's at all possible. Doing so will allow us to make any alterations that we might need to do, since none of the chart marks, whether stitch symbols or boundary lines, would be underneath the tape.

Lesson Learned

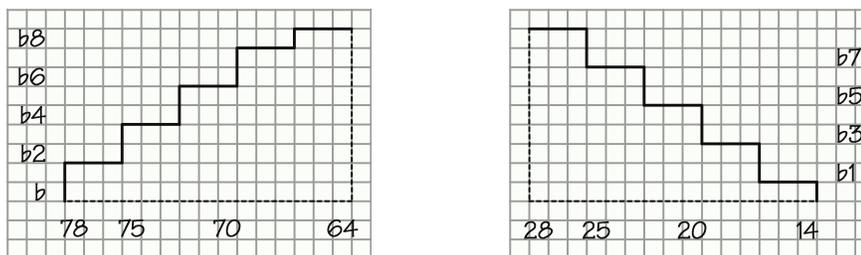
Whenever we tape pieces of a chart together or to another sheet of paper, we should always, if it's at all possible, put the tape on the back side of the pieces. Then we won't have tape on top of any chart marks, so we'll still be able to alter them if we need to.

Shoulder Shaping

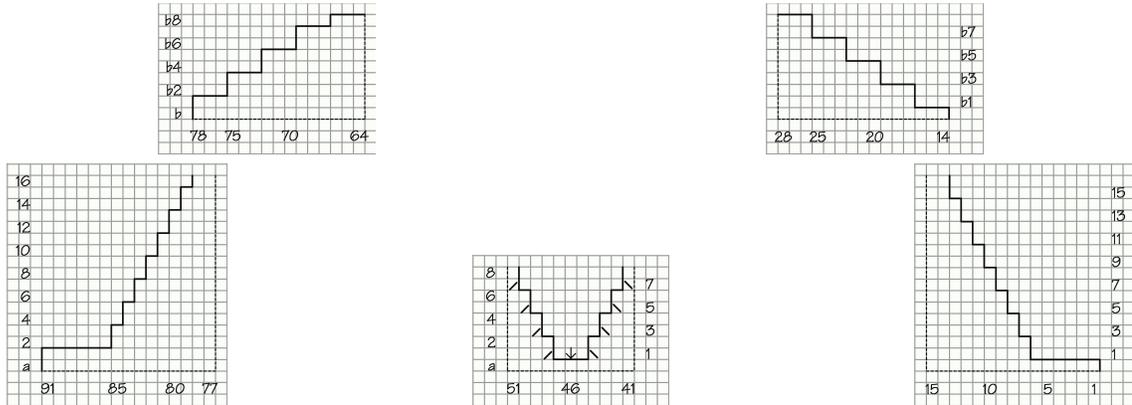
We do the same thing with the two pieces of the shoulder shaping. We align their rows with each other, and we can optionally align their stitches with the underarm and front neck stitches.



We need to swap which piece is on which side, then straighten them up. Since we know row B1 goes between foundation row B and row B2, we can easily position them relative to each other. We can put them as far apart as we like.



We can also tape them to the three pieces already joined, aligning the stitches if the sheet of paper is wide enough.



Here in the book, I had to shrink all the sections quite a bit so the underarm pieces could align their stitches with the shoulder stitches.

If we tape the underarms and front neck at the bottom of a full sheet, we might have space at the top of the page to tape the shoulders to it, possibly with all the stitches aligned. If not, we lay the shoulder charts aside until we’ve worked to that point in needles and yarn.

When There’s a Stitch Pattern

The charts in this chapter showed the vest worked in plain, one-color stockinette. If a project fabric has some kind of stitch pattern or design, whether texture or color, we would chart that pattern at the same time we’re charting the shaping.

Get the Width on One Page

Since we can’t do succinct charts for a project with a stitch pattern, we may not be able to fit the entire chart on one sheet. However, our goal should be to fit the chart’s **width** on a single sheet. Then, as we work each row, we don’t have to pause partway across to adjust which part of the chart is showing.

Switching pages to work the next group of **rows** is fine, but having to switch between pages “one A” and “one B” for the two halves of each row will get annoying pretty quickly.

See part four’s “More Chart Tips” and the appendix “Designing by Charting” for ideas on shrinking a chart to fit its width on one page.

Lesson Learned

If we can't fit the entire chart on one sheet of paper, we should try to fit the entire **width** on the page. Then we can work an entire row without adjusting which part of the chart is showing.

Reminder for Mirror-Image Knitters

You must start with this chapter, drawing your initial chart the exact same way as traditional knitters. Once you complete that version of the chart, you make the changes needed to reflect the fact that you work all rows in the opposite direction.

Those changes are explained and demonstrated in this chapter's MIK supplement.

As you'll see in the supplement, I recommend that you use **only** bending boundary lines to indicate shaping as you draw the traditional knitter chart. Doing so will greatly simplify what you need to do to make the MIK adjustments.

After you've completed the MIK changes, **then** you can quite quickly

- ☉ add explicit bind-off symbols and
- ☉ change non-shaping symbols to decrease symbols.