

# Percentage System

by [Knit Picks Tutorials](#) on [December 16, 2009](#)

## **Elizabeth's Percentage System**

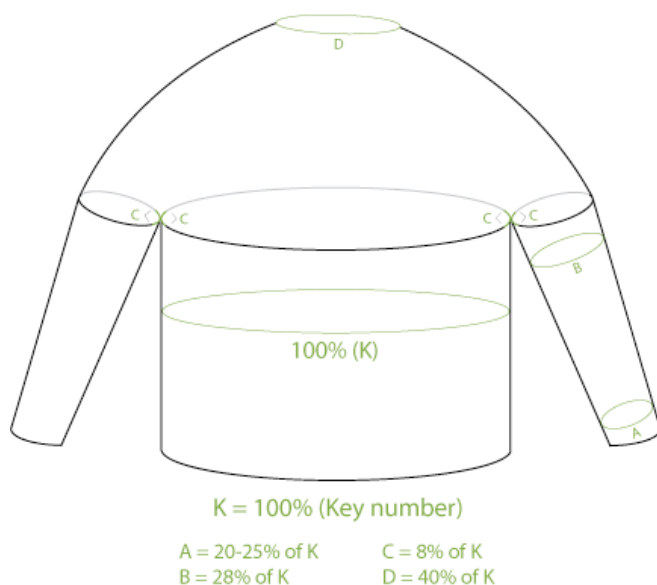
Elizabeth Zimmermann, timeless knitting guru, is the founder of a series of equations related to sweater construction. She refers to these mathematical ratios as Elizabeth's Percentage System or EPS. The system asserts that the ratios between elements of a well-fitted sweater are proportional and can be used to create ideal garments time and again. The basics of her "unvention" are explained below.

The percentage system is based on two general sweater shapes: the yoke and the drop shoulder. In the yoke style, the body is knit in the round to the underarms, as are the sleeves, and all three are joined to work the shoulders and neck in the round. Any number of different finishes can be executed once the body and sleeves are united including raglan, yoke, saddle shoulder and others. The drop shoulder style is worked in the round all the way to the neck with steeks used for the armholes or divided at the armholes and worked back and forth to the neck. The sleeves are joined afterward.

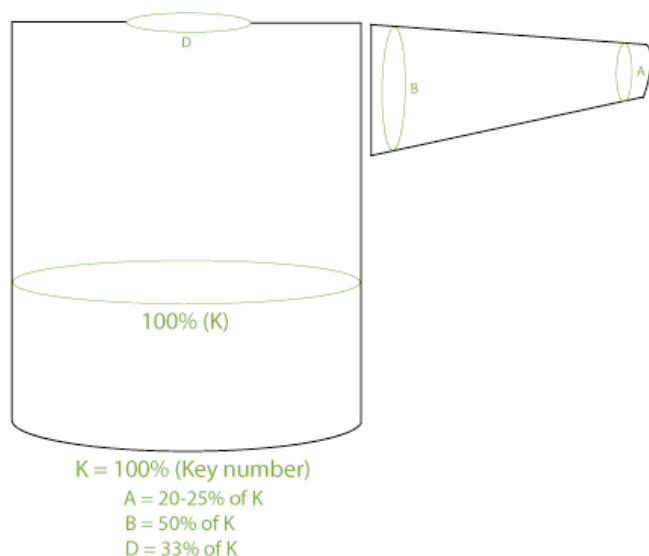
All calculations are based on the number represented by the variable K. K is your "key number" and stands for the number of stitches around the largest part of the body of the garment. You can figure out this value by multiplying your number of stitches per inch (gauge) by the circumference of the garment in inches. For example, a garment knit at 5 stitches per inch that is 50 inches around would result in  $K = 250$ . All further variables are gleaned from this initial number.

There are many wonderful things about this system. You can use it to calculate the dimensions of your favorite sweater in order to recreate the fit in a new sweater. You can also adjust the formulas to reflect the current fashion trends in terms of sleeves and fit. Create a snugger silhouette by reducing the percentage of stitches in the wrist and upper arm of the sleeve, create a boat neck by increasing the number of stitches at the neck, increase with greater or lesser frequency to change the overall shape of the sleeve. The possibilities are endless, as they often are with Zimmermann's teachings.

First let us take a look at the yoke version of the percentage system. Let's continue with the example we started above. The value of K was 250 stitches. Therefore, the value of the other variables would be as follows:  $A = 50$  to 62 stitches,  $B = 88$  to 100 stitches,  $C = 20$  to 25 stitches and  $D = 100$  stitches. "A" are the wrist stitches. To achieve the requisite stitches at the underarm (B), you could increase evenly over the length of the sleeve, or you could increase rapidly to create more drastic shaping. It's really up to you! You will notice that C appears 4 times, once on each sleeve and once on either side of the body. These are the stitches that are placed on hold as the top of the garment is finished. They will be woven together later.



Next, consider the drop shoulder version of the example sweater. Again, we will use  $K = 250$  stitches. Therefore, the value of the other variables would be as follows:  $A = 50$  to  $62$  stitches,  $B = 112$  to  $125$  stitches and  $D = 82$  to  $100$  stitches. You will notice on this sweater that the upper arm is quite roomy at up to half the size of the body. This sweater will have a looser, more sweatshirt-like feel to it.



Depending upon the type of neckline you choose, the number of stitches you need for  $D$  may vary. You may choose to make a v-neck, Henley, or crew neck that is lower in the front by using a steek if you are knitting in the round, or incorporating the shaping if you are knitting the body back and forth above the bottom of the armhole.

**IMPORTANT:** These are merely guidelines and sample measurements. Experiment on your own with measurements from your favorite store-bought or previously knit sweaters. Or, measure the given areas on the person you are knitting for to customize a sweater as a gift. Be creative! Elizabeth Zimmermann is all about giving you the power to customize your own knitted garment!