

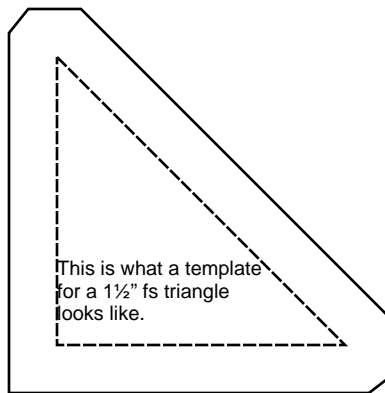
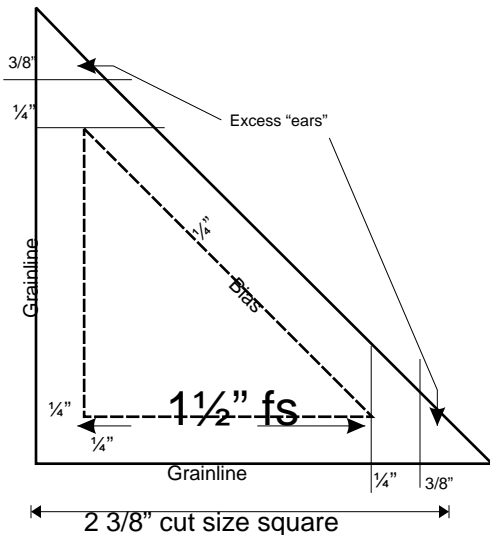
The Math Behind Half Square Triangles and Quarter Square Triangles

Finished size (fs) refers to a unit after all seams have been sewn. For instance, a square sewn into your quilt has seams sewn on all four sides. The finished size measures from seam to seam across the square. If you have a half square triangle unit, the finished size is after the diagonal seam is sewn as well as all outside edges.

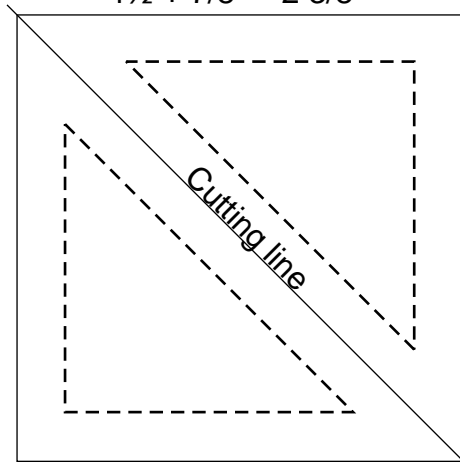
Raw size (rs) refers to a unit where the seams inside the unit have been sewn but the outside edges of the unit are NOT sewn into the quilt or block, yet.

Whenever you have a 45° angle with a quarter inch seam you end up with an additional 3/8" in the seam allowance as a result of the angle. See the diagram. The 90° angle is a simple 1/4". The 45° ends up being 5/8" long from the seam to the seam allowances point (1/4" (or 2/8") + 3/8" = 5/8"). Your total seam allowance is 1/4" + 5/8" = 7/8"

If you have a half square triangle unit (hst), you have *one diagonal seam* so you need to add 7/8" to the *finished size of your hst unit*.



Example:
for a 1 1/2" fs hst:
 $1\frac{1}{2} + \frac{7}{8} = 2\frac{3}{8}$ "



HST Formula:
FS
+ 7/8"
= size to
cut squares

Matrix for commonly used sizes

For HST units finishing to this size:	Cut squares this size:
1"	1 7/8"
1 1/2"	2 3/8"
2"	2 7/8"
2 1/2"	3 3/8"
3"	3 7/8"
3 1/2"	4 3/8"
4"	4 7/8"
4 1/2"	5 3/8"
5"	5 7/8"
5 1/2"	6 3/8"

Quarter Square Triangle Units (QST's) use the same math.

Because you have 2 *diagonal lines*, the math is:

$$\begin{aligned} (3/8'' + 1/4'') + (3/8'' + 1/4'') &= \\ (5/8'') + (5/8'') &= \\ \underline{1\ 1/4''} \end{aligned}$$

Remember, you add an additional 3/8'' for each 45° diagonal seam.

So Finished Size of the QST unit PLUS 1 1/4'' = the size to cut the squares.

QST FORMULA:

$$\begin{aligned} \text{FS QST} \\ + 1\ 1/4'' \\ = \text{Size to cut squares} \end{aligned}$$

Matrix for commonly used size QST's

For QST units finishing to this size:	Cut squares this size:
2"	3 1/4"
2 1/2"	3 3/4"
3"	4 1/4"
3 1/2"	4 3/4"
4"	5 1/4"
4 1/2"	5 3/4"
5"	6 1/4"
5 1/2"	6 3/4"
6"	7 1/4"

