Dr Bob's FT Calculator

The FT Idler position must be set based on the dimensions of the sample and the maximum twisting angle.
If the twisting is from 0° to 90°, the maximum twisting angle is 90°.
Enter the length and width of the sample in mm, and the maximum twist angle in degrees.
The calculator gives the Idler position, the sample length change, and the distance the slider moves.

Sample Length	L		mm	
Sample Width	W		mm	
Maximum Twist Angle	Θ		°	
Length of String to Pulley	H	120	mm	
Position of Idler	R		mm	R = [ΔL x (2 x H + ΔL)] / [2 x H x (1 - cosΘ) + 2 x ΔL]
Sample Length Change	ΔL		mm	ΔL = L - sqrt { L x L - [pi x W x Θ/360)] x [pi x W x Θ/360] }
Slider Moving Distance	ΔS		mm	ΔS = R - H + sqrt { R x R + H x H - 2 x H x R x cosΘ }