SohCahToa! (sung to the tune of Oklahoma!)

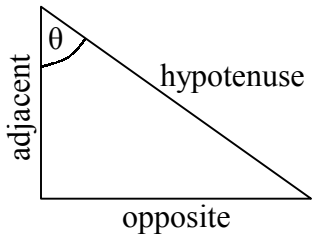
$\mathbf{s}\sin\theta = {}^{\mathbf{O}\text{pp}}/_{\mathbf{H}\text{yp}}$

$\mathbf{c}\cos\theta = {}^{\mathbf{A}\text{dj}}/_{\mathbf{H}\text{yp}}$

$\mathbf{t}\tan\theta = {}^{\mathbf{O}\text{pp}}/_{\mathbf{A}\text{dj}}$

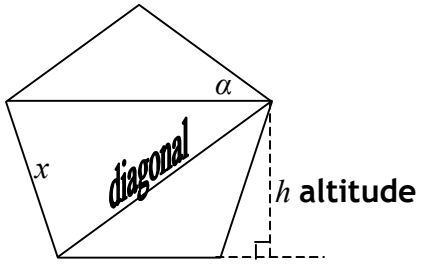
SoooooohCahToa! Where the ratios are always true.
If your angle's right, your goal's in sight
And more values soon will come to you.

SohCahToa! If an angle or a side you need,
Then what you now know will help you go
To an answer if this song you'll heed.

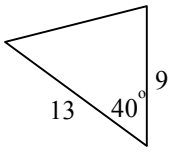


If you ask the right questions you're a hit:
Is this side adjacent or opposite?
Do not confuse these with hypotenuse.
The ones you choose affect what you use in SohCahToa,
SohCahToa, OK?

SoooooohCahToa! If there's no triangle, that's not rude.
You should just elect it to dissect
Go ahead, just drop an altitude!



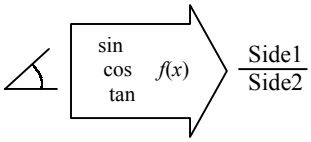
SoooooohCahToa! There is always something that's unknown.
X or *a* or both, don't be a sloth.
In your diagram make sure they're shown.



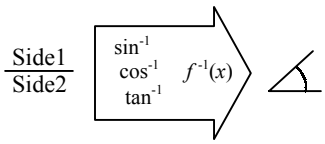
area = 0.5(9)(13)sin(40)

If the area's what you're going to seek,
Then these formulas should not be greek.
With angles right, one half of *base* times *height*
Or else one half *ab* times sinθ.
Formulas make life sweet!

SoooooohCahToa! These are functions, so use them well and shout.
What goes in each one? An angle, done!
And a ratio of sides is what comes out.



SohCahToa! If you have two sides, then please rehearse:
An angle you'll find, if you don't mind
Using Cosine's, Sine's or Tan's inverse.



If no angle that's right is right around,
For the law of sines or cosines you are bound.
And then we saaaaaay, SohCahToa go away!
We only use you when we have a right triangle,
SohCahToa, OK?!

$$\frac{\sin(a)}{A} = \frac{\sin(b)}{B}$$

$$c^2 = a^2 + b^2 - 2ab\cos C$$