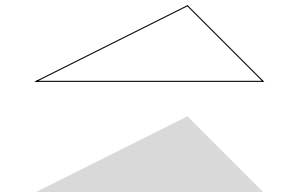
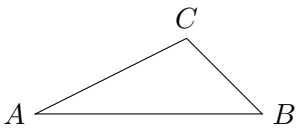
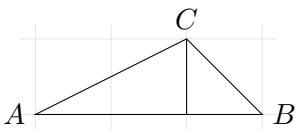
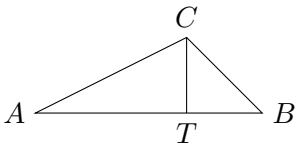
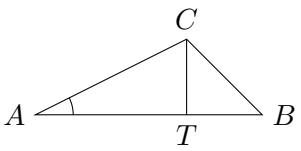
1 Triangle



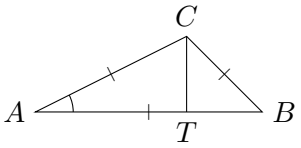




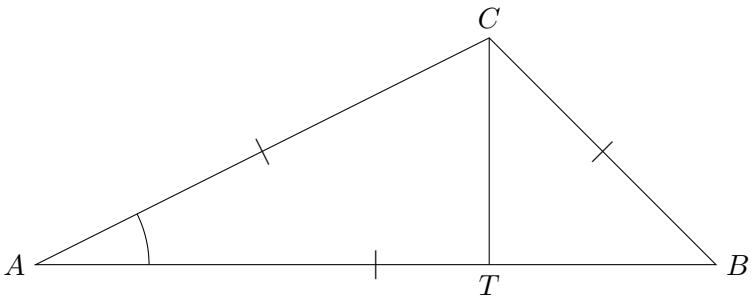




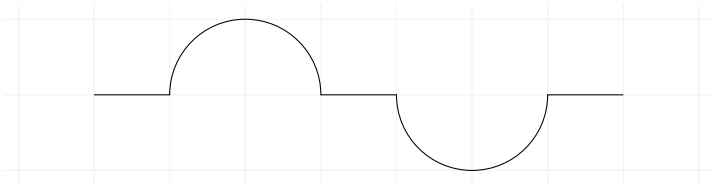
For the next one, you may want to use the miniature variant ˛ (written `$\scriptscriptstyle|$`) of the symbol |:



Or scale up the triangle and use | in its original size:

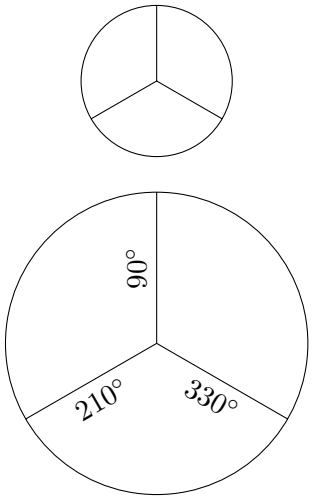


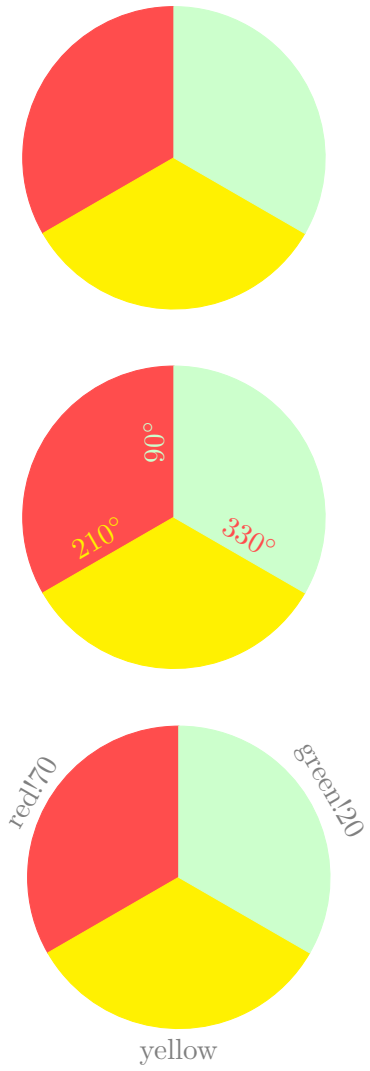
2 Arcs



3 Mercedes

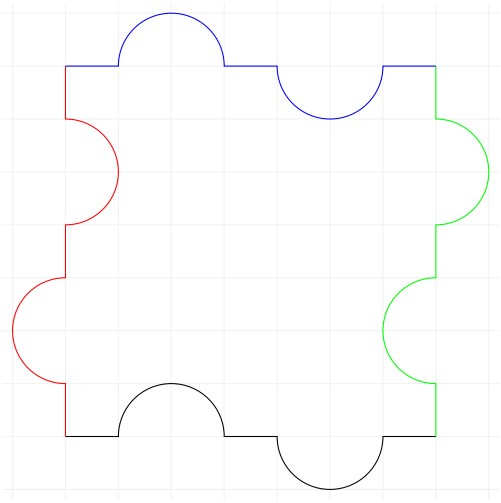
Use polar coordinates!



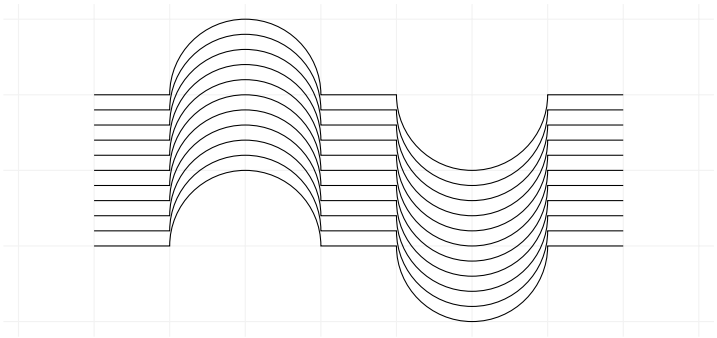


4 Transformations

For the next one, use the first example in Section 2 and `rotate around` (and perhaps `shift`).

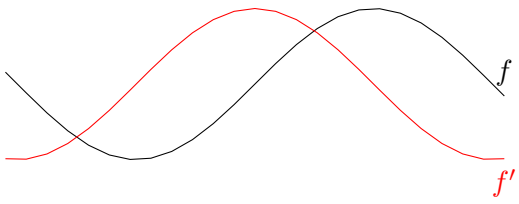


Use `yshift` and `\foreach`! (For `yshift` the unit doesn't seem to be centimeters, so you may have to write something like `yshift = 0.2cm`.)

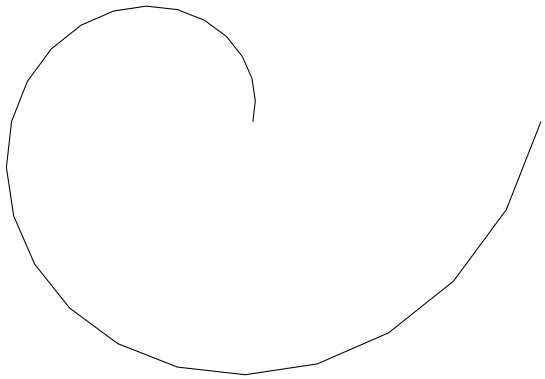
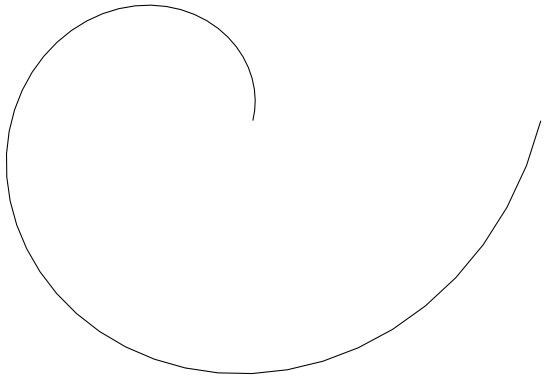


5 Plots

Some node positioning options, for example `near start`, don't work here. `above`, `below`, `midway` seem to.



The next one is the plot of $\{\,(\varphi, e^{\varphi/4}) \mid \varphi \in [0, 2\pi]\,\}$ written in polar coordinates. Don't forget that TikZ expects the angle in degrees, and that you can convert to degrees using `deg`.



We can make this look smoother by including `samples=50` as one of `plot`'s option.