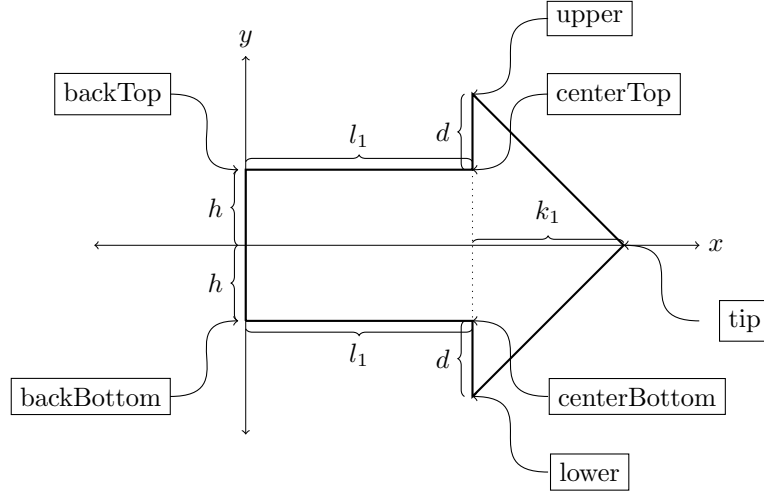


Diagrams and equations for WWDC18 Scholarship submission

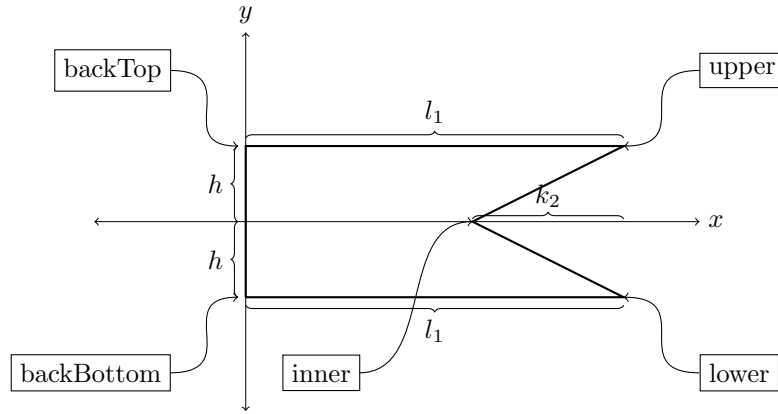
Yuval Gat

March 2018

Hour arrow variable names



Minute arrow variable names



Rotation equations

In order to rotate the point (x_0, y_0) about the origin $(0, 0)$ with angle θ (clockwise), one uses the following formulas:

$$\begin{aligned}x' &= x \cos(\theta) - y \sin(\theta) \\y' &= x \sin(\theta) + y \cos(\theta)\end{aligned}$$

We apply these formulas repeatedly throughout my code in order to rotate the arrow properly.