Notice that there is a <u>second</u> invariant

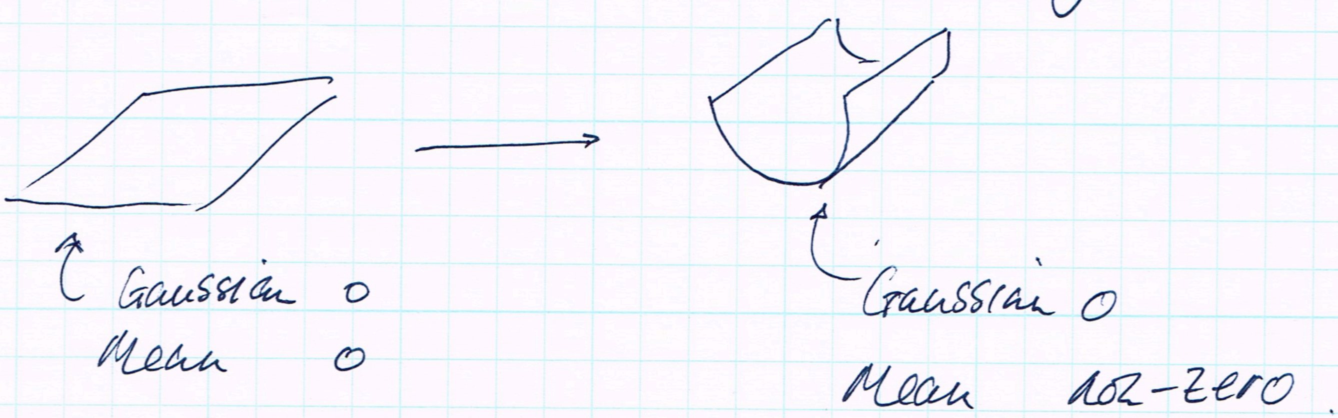
$$\mathrm{Trace}(Q) = \mathrm{Trace}(R^T Q R^T) = \kappa_1 + \kappa_2$$

$$\boxed{\text{Mean curvature} = \frac{\kappa_1 + \kappa_2}{2}}$$

AARGH!

Gaussian curvature has to do with <u>area</u>
(demo w/ piece of paper)

Mean curvature with <u>bending</u>



Clearly, there are surfaces w/ non-zero G.C. and zero M.C.

$\Rightarrow$ here G.C. is <u>always</u> -ve.

At this point, we need more powerful machinery – we don't want to constantly reparametrize.