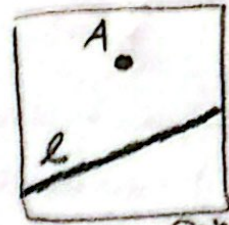


2D Euclid

1) Given a line l , on patty paper and a point A not on the line, what steps can you take to fold a line through A that is parallel to l ?

We start with a line l and point A not on l .



Patty paper square

Let's fold the patty paper in such a way that l lies on top of itself.



Since the patty paper is a bit transparent we can slide the crease up and down keeping the line l folded on top of itself until the crease passes through A .

Unfold the patty paper, label the crease m .



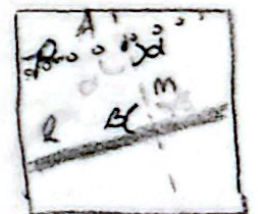
Let C be the intersection of m and l .

Choose X and Y on l so that $X-C-Y$

Note by construction $\mu(\angle XCA) = \mu(\angle YCA)$

Since the 2 angles are equal & supplementary $\mu(\angle XCA) = \frac{\pi}{2} = \mu(\angle YCA)$

We will repeat the process of folding the paper so the line m folds on itself and sliding the crease until A is on the crease. Unfold, label the new crease p .



A similar consideration of angles $\Rightarrow A \perp m$.

Thus $\angle A = \angle B$ with m & l and p is parallel to l .