Origami axioms [Huzita 1985; Justin 1989; Hatori 2004]

6.885
L21.2
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- lines = creases; points = intersections of creases
- "fold" reflects through a constructed line
- fold always followed by unfold

} for simplicity

HUZITA-JUSTIN

① given points p, q, fold line thru p & q

② given points p, q, fold perpendicular bisector
i.e. fold p onto q

③ given lines l, l', fold l onto l'
i.e. bisector line

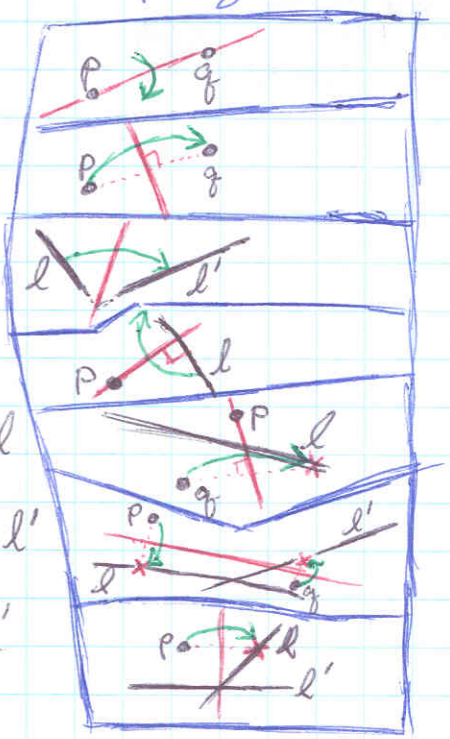
④ given point p & line l, fold thru p & perp. to l
i.e. fold p onto p & l onto l

⑤ given points p, q & line l, fold p onto p & q onto l
i.e. thru p

⑥ given points p & q & lines l & l', fold p onto l & q onto l'

HATORI

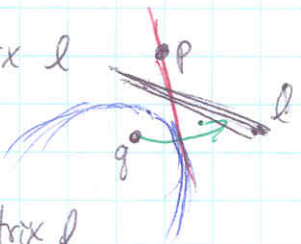
⑦ given point p & lines l & l', fold p onto l & l' onto l'
i.e. perp to l'



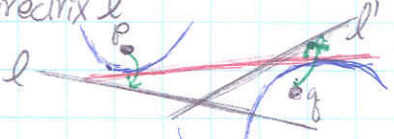
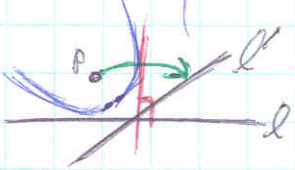
- these are all possible single-crease folds defined by alignment of points and/or lines [Lang 2004]

- parabola view:

⑤ tangent of parabola with focus q, directrix l passing through p



⑥ common tangent of parabola with focus p, directrix l & parabola with focus q, directrix l'



⑦ tangent of parabola with focus p, directrix l perpendicular to l'