[1] TM19/9/12

Propt Fig 1

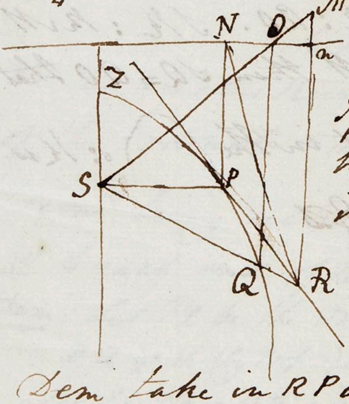
by hypoth $SP = mP$ but $LmPN$

is a parallgm ∴ $SP = LN = AN + AS$

Prop 2 When P reaches B, N coincides with S, (1C) $SB = NP$, but

$NP = 2AS$ by Transposition $AS = \frac{NP}{2}$

$= \frac{Bc}{4}$ which $= 2NP$



If the line RPZ bisects the ∠ SPN it is a tangt to the Curve

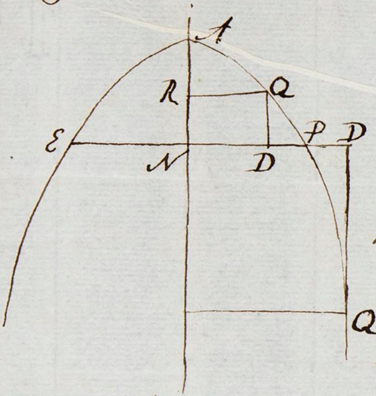
Dem take in RP any point R & join

SR, RN, then in the △s SPR, NPR

the ∠s SPR, NPR are = being supplts

of the $\angle$s SPZ, ZPR ∴ the base SR = base ZR, — from R draw Rn $\perp$r to directrix & it is less y.^{n} RZ, make RM = RZ, & join SM cutting directrix in O from which draw OQ $\perp$r to directrix ∴ Δs SQO, SMR are sim.^{r} & SQ : QO :: SR : RM but SR = RM then SQ = QO that QO is a point in the ∴ R is without it. QED

3)



If from any point in a double ordinate or that produced a $\perp^r$ be drawn meeting the curve the Rectangle under the $\perp^r$ & Latus Rectum = the Rectangle of the Ordinate & that produced (the segm^{ts} being reckoned from the $\perp^r$ to each end of the Ordinate)

<u>Dem</u>: Let PE be the Ordinate

DQ y^e $\perp^r$ (by Prop 3) $L \times An = Pn^2 = En^2$

also $L \times Ak = QR^2 = nD^2$

$\therefore L \times \overline{An - Ak} = En^2 - nD^2$

i.e. $(L \times kn)$ $L \times QD = \overline{En + nD} \times \overline{En - nD}$

$= ED \times PD$. Q.E.D.