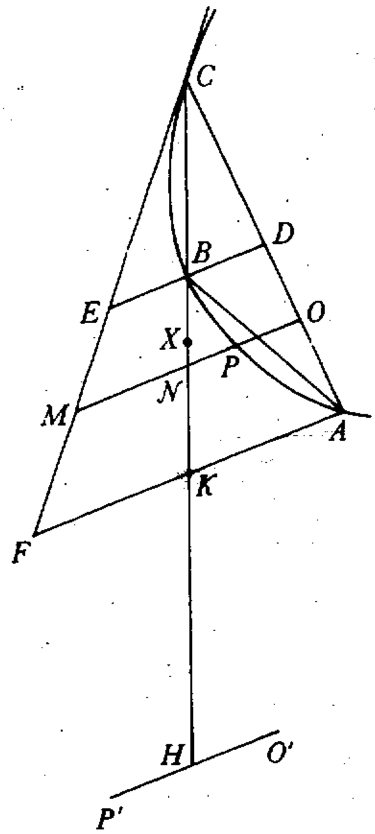
ARCHIMEDES: VÆGTSTANG

1. Equal weights at equal distances are in equilibrium, and equal weights at unequal distances are not in equilibrium but incline toward the weight which is at the greater distance.
2. If, when weights at certain distances are in equilibrium, something is added to one of the weights, they are not in equilibrium but incline toward the weight to which the addition was made.
3. Similarly, if anything is taken away from one of the weights, they are not in equilibrium but incline toward the weight from which nothing was taken.
6. If magnitudes at certain distances are in equilibrium, other magnitudes equal to them will also be in equilibrium at the same distances.

PROPOSITION 1 *Weights which balance at equal distances are equal.*

PROPOSITION 2 *Unequal weights at equal distances will not balance but will incline toward the greater weight.*



FRA ARCHIMEDES

'METODEN'

VISER:

$\frown ABC = \frac{4}{3} \Delta ABC$

SKITSE:

- D SÅ $CD = \frac{1}{2} AC$
- CF ER TANGENT I C.

- KONSTRUÉR DE SOM MØDER TANGENT I C
- KONSTRUÉR FA PARALLEL M. ED.
- ~~TRÆK~~ FORLÆNG CB TIL H, SÅ $CK = KH$.
  ($EB = BD$).

VÆLG VILK. LINIESTYKKE MO PARALLEL M. ED.

OPFATTER:

AREAL AF $\frown ABC$ = SUM AF "PO"

AREAL AF ΔAFC = SUM AF "MO"

VISER AT:

$$MO : PO = HK : KN$$

OG HVIS $P'O$ PLACERES VED H:

$$MO : P'O' = HK : KN$$

DVS. $P'O'$ OG MO VIL VÆRE I LIGEVÆGT I K.

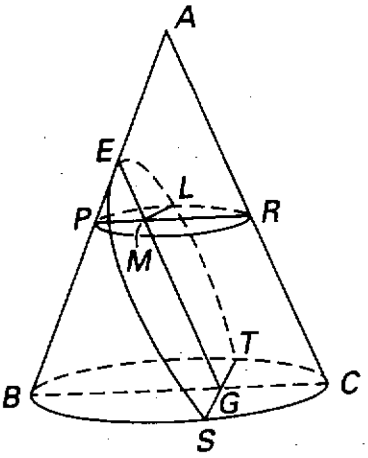
DERFOR $\Delta AFC : \frown ABC = HK : KX = 3 : 1$

MEN $\Delta AFC = 4 \cdot \Delta ABC$, SÅ

$$4 \Delta ABC : \frown ABC = 3$$

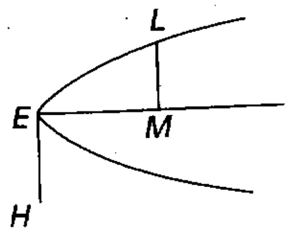
OG $\frown ABC = \frac{4}{3} \Delta ABC$.

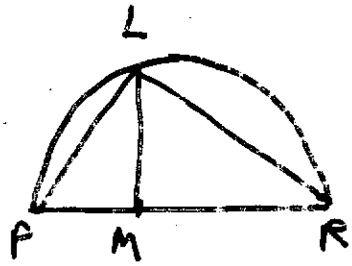
Appolonius: KEGLESNIT



$LM \perp PR$ så:

$$LM^2 = PM \cdot MR$$





VÆLG EH VINKELRET PÅ EG, SÅ:

$$\frac{EH}{EA} = \frac{BC^2}{BA \cdot AC} = \frac{BC}{BA} \cdot \frac{BC}{AC}$$

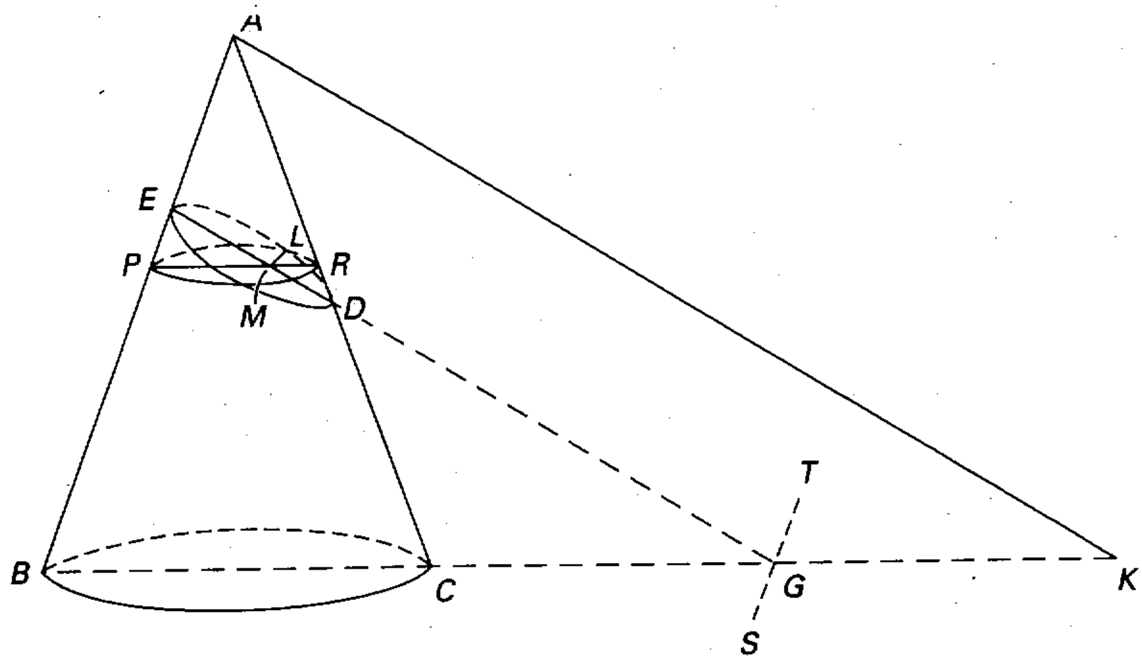
DETTE GIVER

Især ved ensvinklede Δ

$$LM^2 = PM \cdot MR = EH \cdot EM.$$

$LM = x$ $EM = y$ OG $EH = p$:

$$x^2 = p \cdot y$$



HER VÆLGES EH SÅ

$$\frac{DE}{EH} = \frac{AK^2}{BK \cdot KC}, \ldots$$