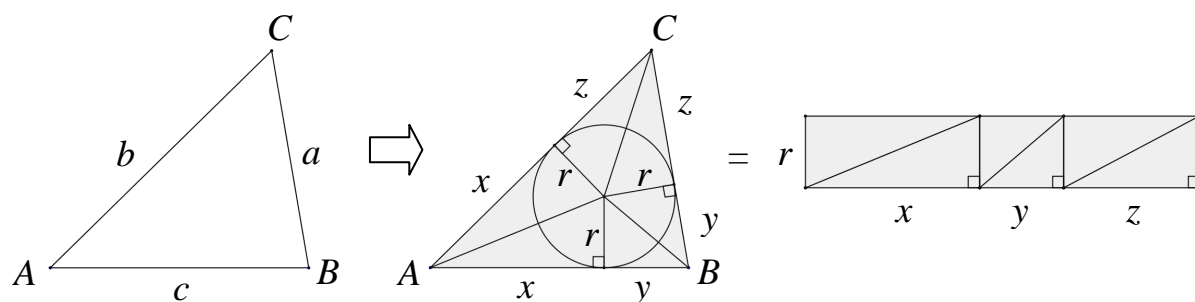


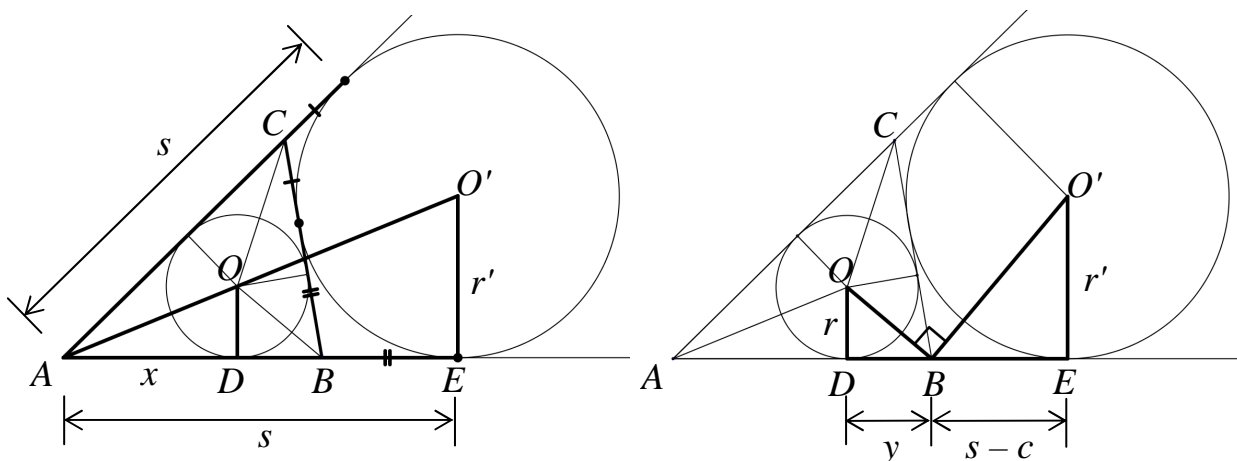
有圖為證：希羅公式 (Heron's Formula)

柯志明

設 $\triangle ABC$ 的面積為 K ， $s = \frac{a+b+c}{2}$ 。



$$s = x + y + z = x + a = y + b = z + c \quad \dots\dots (1) ; \quad K = r(x + y + z) = rs \quad \dots\dots (2)$$



$$\triangle OAD \sim \triangle O'AE \quad \therefore \frac{r}{x} = \frac{r'}{s} \quad \dots\dots (3) ; \quad \triangle ODB \sim \triangle BEO' \quad \therefore \frac{r}{y} = \frac{s-c}{r'} \quad \dots\dots (4)$$

$$(3) \times (4): \quad \frac{r^2}{xy} = \frac{s-c}{s} \quad \Rightarrow \quad rs = \sqrt{s(s-c)xy}$$

$$= \sqrt{s(s-a)(s-b)(s-c)} \quad \text{由 (1)}$$

$$\therefore K = \sqrt{s(s-a)(s-b)(s-c)} \quad \text{由 (2)}$$

參考文獻

Kung, S.H. (1992). Another Elementary Proof of Heron's Formula. *Mathematics Magazine* V65.5, p.337 – 338.

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