

塞瓦定理, Ceva, 1678

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设 P 是 $\triangle ABC$ 所在平面上的一点, 直线 AP, BC 交于点 D , 直线 BP, CA 交于点 E , 直线 CP, AB 交于点 F , 则

$$\frac{AF}{FB} \cdot \frac{BD}{DC} \cdot \frac{CE}{EA} = 1.$$

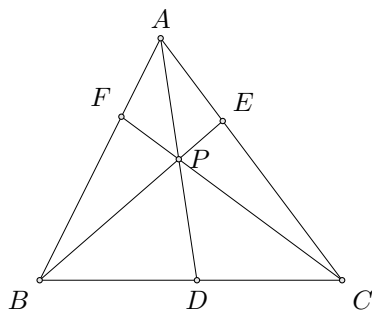


图 1.1

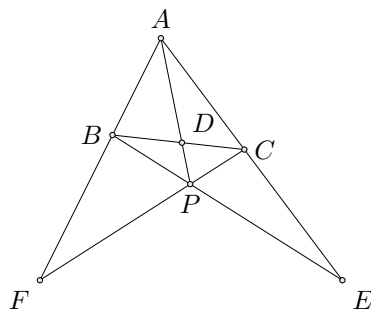


图 1.2

角元形式: 设 AD, BE, CF 交于一点, 则

$$\frac{\sin \angle BAD}{\sin \angle CAD} \cdot \frac{\sin \angle ACF}{\sin \angle BCF} \cdot \frac{\sin \angle CBE}{\sin \angle ABE} = 1.$$

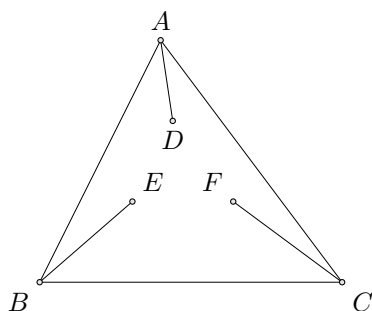


图 1.3

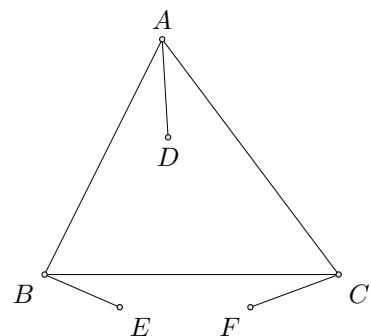


图 1.4

圆内接六边形形式: 在圆内接六边形 $ABCDEF$ 中, 对角线 AD, BE, CF 交于一点当且仅当

$$\frac{AB}{BC} \cdot \frac{CD}{DE} \cdot \frac{EF}{FA} = 1.$$

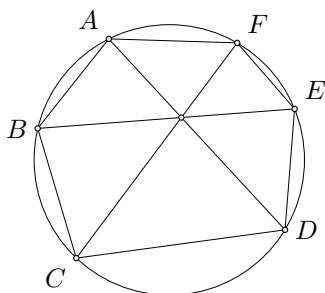


图 1.5