The Brocard Points and the Brocard Angle.

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Figure 6.

I. Construction for the Brocard points.

Let ABC be a triangle. Describe a circle touching AB in A and passing through C; draw the chord AP parallel to BC. Join BP meeting this circle in Ω.

Join $A\Omega$, $C\Omega$.

Then
$$\angle \Omega AB = \angle \Omega CA,$$
$$= \angle \Omega PA$$
$$= \angle \Omega BC.$$

Similarly for Ω'.

II. Characteristic property of the Brocard angle.

Draw AX, PR perpendicular to BC.

Since AP, CQ are parallel chords,

the triangles ACX, PQR are congruent by symmetry;

therefore $AX = PR, \quad CX = QR.$

Now
$$BR = BX + CX + CR$$
$$= BX + CX + QX;$$

therefore, dividing each of the terms by the equals AX or PR,

$$\cot\omega = \cot B + \cot C + \cot AQC$$
$$= \cot B + \cot C + \cot A.$$

On the Solitary Permanent Wave: A continuation.

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