The Hebrew Theorem

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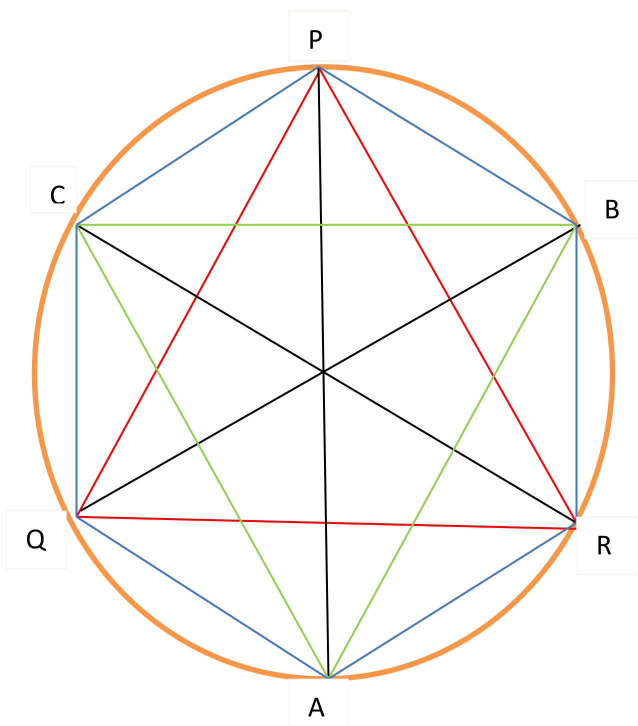
Abstract

This paper proves a geometric theorem the Hebrew nation that is the Patriarchs; Abraham, Isaac and Jacob and the twelve tribes of Israel. The chords are drawn in such a way that they form a star of David and a cyclic hexagon. The circle represents the Hebrew state.

Theorem statement:

$$\boldsymbol{Abraham} \times \boldsymbol{Isaac} \times \boldsymbol{Jacob} = \sqrt{(\boldsymbol{Benjamin} \times \boldsymbol{Judah} + \boldsymbol{Reuben} \times \boldsymbol{Simeon})(\boldsymbol{Aser} \times \boldsymbol{Gad} + \boldsymbol{Ephraim} \times \boldsymbol{Nepthalim})(\boldsymbol{Dan} \times \boldsymbol{Mannaseh} + \boldsymbol{Zabulon} \times \boldsymbol{Issachar})}$$



Derivation:

Let $PA = Abraham, QB = Isaac, RC = Jacob, AB = Judah, PQ = Benjamin, PB = Reuben, QA = Simeon, BC = Gad, QR = Aser, RB = Nepthalim, QC = Ephraim, PR = Manasseh, AC = Dan, RA = Zabulon, PC = Issachar$

Consider cyclic quadrilateral PQAB and apply Ptolemy's theorem, we get:

$$PA \times QB = (PQ \times AB + QA \times PB) \dots\dots\dots\dots\dots i$$

Similarly by applying Ptolemy's theorem on cyclic quadrilateral PRAC, we get:

$$PA \times RC = (PR \times AC + AR \times PC) \dots\dots\dots\dots..ii$$

Finally by applying Ptolemy's theorem on cyclic quadrilateral QRBC, we get:

$$QB \times RC = (QR \times BC + QC \times BR) \dots\dots\dots\dots.iii$$

Combining equations i, ii and iii by multiplication we get:

$$(PA \times QB \times RC)^2 = (PQ \times AB + QA \times PB)(PR \times AC + AR \times PC)(QB \times RC + QC \times BR)$$

Therefore we get:

$$PA \times QB \times RC = \sqrt{(PQ \times AB + QA \times PB)(QR \times BC + QC \times BR)(AC \times PR + AR \times PC)}$$

$$\boldsymbol{Abraham \times Isaac \times Jacob} = \sqrt{(\boldsymbol{Benjamin \times Judah + Reuben \times Simeon})(\boldsymbol{Aser \times Gad + Ephraim \times Nepthalim})(\boldsymbol{Dan \times Mannaseh + Zabulon \times Issachar})}$$

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