World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 37, August, 2024
ISSN: 2749-3628,

MAGIC GEOMETRY

[1]Ibragimov Anvar , [2]O`rozova Zilola,
[1]Professor
[2]Student
Uzbek-Finnish pedagogical Institute

Article history:
Received: 28th May 2024
Accepted: 26th June 2024

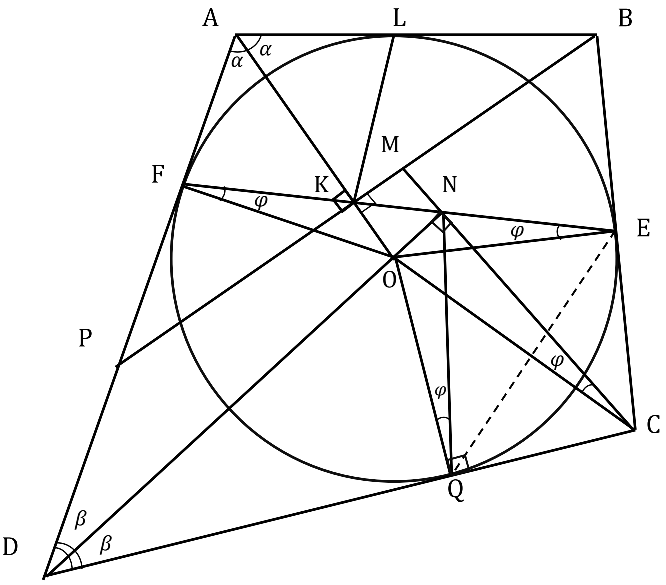
Abstract:
This article we will provide readers with interesting information about geometric issues and ways to solve them.

Keywords: circle, parallelogram, radius, angle.

Issue 1.

O centered circle ABCD is drawn internally into the rectangle. This circle is on the sides BC and AD at points E and F, respectively urinadi. AO∩EF=K, DO∩EF=N and BK∩ CN=M: O, K,M,N points lie in a single circle.

Proof: let ABCD be the point L of attempt with AB of an inner drawn circle.⇒ KL cross-section .⇒$FA = AL\ va\ \angle FAK = \angle KAL = \alpha \Rightarrow \Delta AFK = \Delta ALK \Rightarrow FK = KL, \angle PKF = \angle LKB\ va\ \Delta PFK = \Delta AKB \Rightarrow FP = LB \Rightarrow AP = AB. \Rightarrow \angle APB = \angle PBA = 90° - \alpha \Rightarrow AK \perp BK.\ \ (*)$



Let the point of attempt of the circle with DC be Q.⇒ Host White,OF,OE and OCS ⇒OQ⊥OC ∠FDO=β bo`lsin va ∠OFK=$\varphi$ bo`lsin⇒∠ODQ=β, $\angle NEO = \varphi\ va\ \angle DNF = 90° - \beta - \varphi. \angle FOD = \angle DOQ \Rightarrow \angle FON = \angle QON\ va\ FO = QO, \Rightarrow \Delta FON = \Delta NOQ \Rightarrow \angle OQN = \varphi\ \ \angle FNO = 90° - \beta - \varphi \Rightarrow \angle FON = 90° + \beta \Rightarrow \angle NOE = 90° - 2\varphi - \beta\ ,\ \angle OQN = \angle OEN \Rightarrow ONEQ - siklik \Rightarrow \angle NQE = 90° - 2\varphi - \beta \Rightarrow \angle OQE = 90° - \beta - \varphi. OQ \perp CQ\ va\ \ OE \perp CE \Rightarrow OECQ - siklik \Rightarrow \angle OCE = \angle OCQ = 90° - \varphi - \beta\ va\ \angle DNF = 90° - \varphi - \beta \Rightarrow ONEC - siklik\ \Rightarrow \angle OCN = \varphi \Rightarrow ONCQ - siklik \Rightarrow ON \perp CQ. (*) according\ to\ AK \perp BK \Rightarrow \angle OKM = \angle ONM = 90° \Rightarrow OKMN - siklik \Rightarrow O,K,M,N\ nuqtas\ lie\ in\ a\ single\ circle.$▲

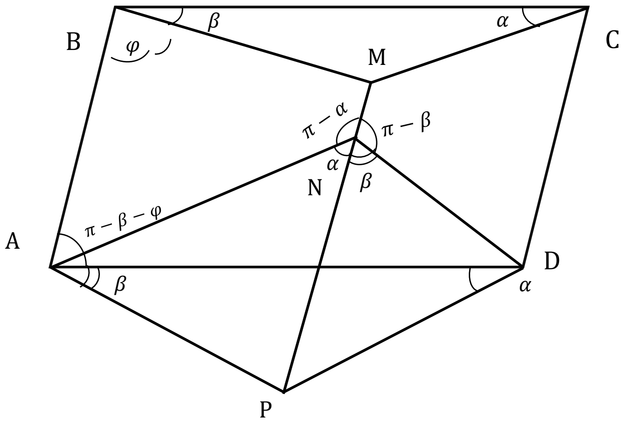
Issue 2

Inside the ABCD parallelogram, a point M is obtained, inside theΔAMD, a point N is obtained.For these points, the condition ∠MNA+MC MCB=∠MND+∠MBC=180° is satisfied. Prove: MN∥AB

Proof: during MN we get such a point P, where ANDP is cyclic.⇒∠DNP=∠DAP=β va ∠ANP=∠ADP=α ⇒ΔADP∾ ΔBMC
AD=BC⇒ΔADP=ΔBMC⇒BM=AP (1)
∠ABM=φ bo`lsin ⇒∠PAD=$\pi - \beta - \varphi$ ⇒∠BAP=$\pi - \varphi$ ⇒BM∥AP (2)

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 37, August, 2024
ISSN: 2749-3628,

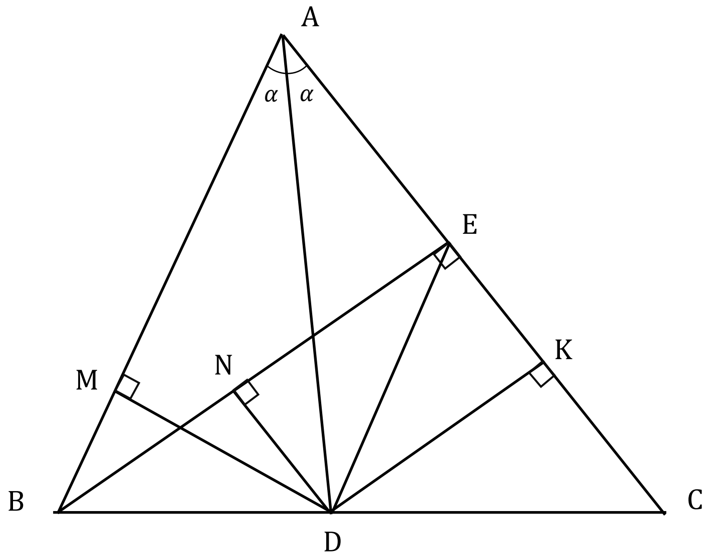
(1)Va (2) ⇒ BMPA- parallelogram ⇒AB∥MP ⇒ AB∥MP⇒▲



Issue 3.

ΔABC is a triangle with an acute angle. AD bissektrisa and BE held Heights. Prove: ∠CED>45°

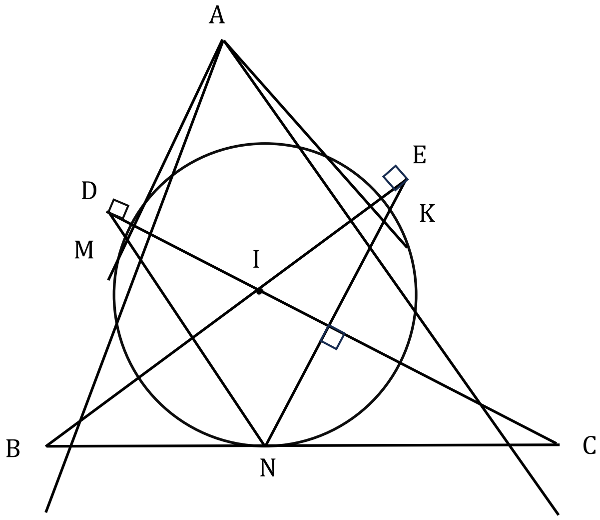
Isbot: M∈AB , K∈AC, N∈BE let it be here DM⊥AB, DK⊥AC, DN∈BE ΔABC acute angle.⇒ these points lie in suitable cuts. DN⊥BE BE⊥EK, DK⊥EK ⇒DNEK right round ⇒ NE=DK va ND=EK AD- bisectrisa ⇒ $\Delta MAD = \Delta DAK$ ⇒ DK=DM DM>DP>DN=EK ⇒DK>EK (MO∩BN=P) ⇒ ∠DEK>∠EDK ⇒ ∠DEK=∠DEC>45°⇒▲



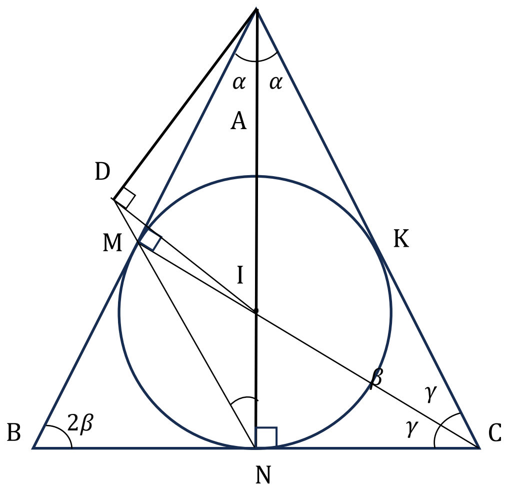
Issue 4.

ΔAn inner drawn circle to ABC tries at points M, N and K,respectively, to sides AB, BC and CA. A straight line passed from point a parallel to NK intersects MN at Point D. A straight line transferred from point A to mn as a parallel lel intersects NK at point E. Prove: the de straight line Δcontains the midline of ABC.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 37, August, 2024
ISSN: 2749-3628,



Proof: Δlet the center of the circle drawn internally to ABC be point I. ⇒CI⊥NK
LEMMA; ΔABC to inner drawn circle AB , BC va CA s respectively M, N , K let it urinate in points. (I – Circle Center). MN∩CI=K let.⇒ AK⊥CI.
Proof: ∠A=2α, ∠B=2β, ∠C=2γ let. MBNI- siklik ⇒∠MNI=β va ∠NCI= γ ⇒ ∠NKC=α va ∠MAI=α ⇒ KMIA-siklik ⇒ ∠AKI=90° ⇒ AK⊥CI ⇒ Lemma proved. ⇒ NK∥AD ⇒ D, I, va C collinear. Similarly the points E, I, B are collinear.



LEMMA; bo'lsin let ω, drawn internally to ABC, be the center of the circle I. let the points of ω that are tried with AB, BC, CA be M, N, K. ⇒The midline opposite CI, MN and BC intersects at one point.

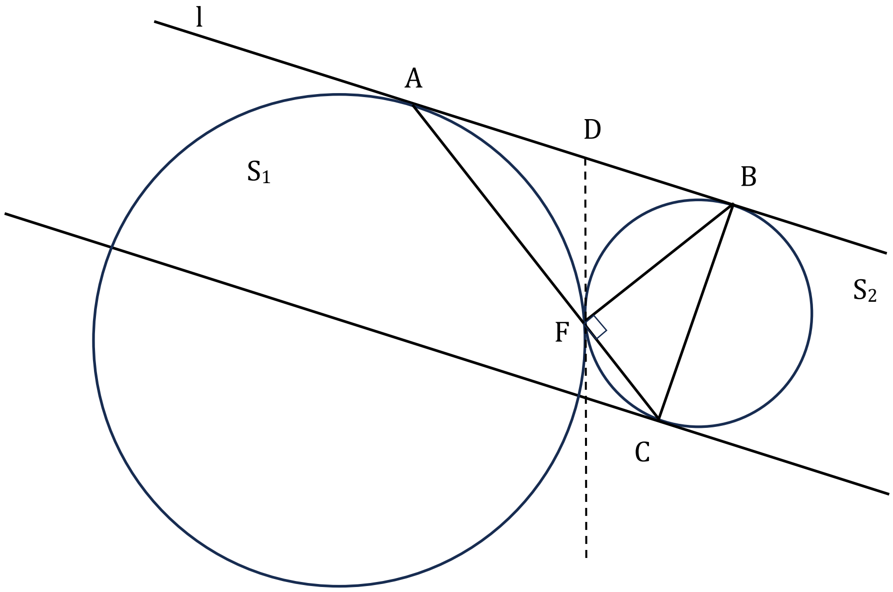
So a straight line transferred from point D to BC passes through the middle of the AB and ACS. Similarly a straight line transferred from point E to BC passes through the grooves of AB and ACS. ⇒ D and points E lie on the midline of the Triangle. ⇒▲

Issue 5.

Circles S_1 and S_2 urinate externally at point F, A Straight Line l urinates at points A and B, respectively S_1 and S_2. straight line parallel to l

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 37, August, 2024
ISSN: 2749-3628,

Cuts to S_2 at Point C and S_1 at two points. Prove: points A, F and C collinear



Proof: the BC cross section passes through the center of S1. ⇒ Urin BFC = 90° F from point urination.⇒ AD=DF , DF=DB ⇒ BF⊥AF ⇒ A, F, C the dots are collinear.

REFERENCES.

1. A.V.Pogorelov, Analitik geometriya., T.O'qituvchi,, 1983 y.
2. Курбон Останов, Ойбек Улашевич Пулатов, Джумаев Максуд, «Обучение умениям доказать при изучении курса алгебры,» Достижения науки и образования, т. 2 (24), № 24, pp. 52-53, 2018
3. OU Pulatov, MM Djumayev, «In volume 11, of Eurasian Journal of Physics,,» Development Of Students' Creative Skills in Solving Some Algebraic Problems Using Surface Formulas of Geometric Shapes, т. 11, № 1, pp. 22-28, 2022/10/22.
4. Курбон Останов, Ойбек Улашевич Пулатов, Алижон Ахмадович Азимов, «Вопросы науки и образования,» Использование нестандартных исследовательских задач в процессе обучения геометрии, т. 1, № 13, pp. 120-121, 2018.
5. АА Азимзода, ОУ Пулатов, К Остонов, «Актуальные научные исследования и разработки,» МЕТОДИКА ИСПОЛЬЗОВАНИЯ СКАЛЯРНОГО ПРОИЗВЕДЕНИЯ ПРИ ИЗУЧЕНИИ МЕТРИЧЕСКИХ СООТНОШЕНИЙ ТРЕУГОЛЬНИКА, т. 1, № 3, pp. 297-300, 2017.
6. INTERESTING EQUATIONS AND INEQUALITIES A Ibragimov, O Pulatov, A Qochqarov Science and innovation 2 (A11), 148-151
7. THE ARITHMETIC ROOT OF THE DEGREE OF THE NATURAL EXPONENT IA Muxammadovich, AH Sanakulovich, PO Ulashevich, M Akbar Science and innovation 2 (A4), 269-271