

C. V. of Mowaffaq Hajja

(April 1, 2016)

A Short C. V.

After obtaining my Ph. D. in 1978, I taught for 2 years at Michigan State University, and then moved to Yarmouk University where I have been since then.

My research interests include *algebra*, *means*, and *geometry*, and I have written more than 100 articles and notes in these fields. Many of these are written singly, but many also in collaboration with more than 20 co-authors from various parts of the world, reflecting my great interest in joint work. I was a recipient of a *National Science Foundation Grant* during 1979-1981, and was an associate member of the *International Centre for Theoretical Physics* during 1994–1999.

I have also written more than 280 reviews, refereed scores of papers, and served on the editorial board of several journals. I have participated in several conferences, and was a keynote speaker in several of them. I have hosted several mathematicians as short-term visitors.

I also have a keen interest in teaching and education, and some of my articles have appeared in education-oriented journals. I was also the recipient of an award for *Excellence in Teaching* from Yarmouk University in 1984, and I have collaborated in writing two textbooks (in Arabic). I have taught most of the courses offered in an undergraduate program in mathematics and several graduate courses, and have supervised 11 M.Sc. students.

I am also interested in Problem Solving, and have contributed more than 30 problem proposals to international journals. I have also served on the committee administering the First, Second, Third, and Fourth Gulf Mathematical Olympiads. These were held in Dubai (UAE) in 2012, in Doha (Qatar) in 2013, in Muscat (Oman) in 2014, and in Kuwait (Kuwait) in 2015. I am ready to help in any activity that would lead ultimately to a successful Olympiad Team in Jordan or in any other Arab country.

In the context of popularizing mathematics, I have given several public lectures at several places, and administered a successful mathematical exhibition at Yarmouk University in 1993.

Personal data.

Place and Date of Birth	Attil, 1946
Nationality	Jordanian
Marital Status	Married with 5 children
Address	Department of Mathematics Yarmouk University Irbid - Jordan
E-mail	mowhajja@yahoo.com
Telephone and Fax Nos.	Mobiles: 0799342162, 0789249169 Office: 00962-2-7211111 (ext. 2683) Home: 00962-2-7012069

Education.

Institution	Specialization	Degree	Date
Purdue U (USA)	Mathematics (Algebra)	Ph.D	Dec. 20, 1978
U of Minnesota (USA)	Mathematics	Ph.D Candidacy	June 1975
Middle East Technical U (Ankara, Turkey)	Mathematics	B.Sc	Aug. 23, 1972

Employment Record.

Institution	Position	Dates
The German-Jordanian University	Professor	Sept. 2014 - now
Yarmouk University	Professor	Sept 2007 - Sept. 2014
The German-Jordanian University	Professor	Sept. 2006 - Aug. 2007
Yarmouk University	Professor	Sept. 2003 - Aug. 2007
Yarmouk University	Professor and Chair	Sept. 2001 - Aug. 2003
University of Sharjah	Professor	Sept. 2000 - Sept. 2001
American University of Sharjah	Professor	Sept. 1998 - Sept. 2000
Women's College of Education (Rustaq - Oman)	Professor and Chair	Sept. 1997 - Sept. 1998
Yarmouk University (Jordan)	Professor	May 1992 - Sept. 1997
Yarmouk University (Jordan)	Associate Professor	Sept. 1990 - May 1992
Kuwait University	Associate Professor	Sept. 1986 - July 1990
Yarmouk University (Jordan)	Associate Professor	Feb. 1985 - Sept. 1986
Yarmouk University (Jordan)	Assistant Professor	Sept. 1980 - Feb. 1985
Michigan State U (USA)	Instructor	Sept. 1978 - Sept. 1980
Purdue U (USA)	Teaching Assistant	Sept. 1976 - Sept. 1978
U of Minnesota (USA)	Teaching Assistant	Sept. 1973 - Sept. 1976

Courses Taught.

I have taught most of the courses usually offered in an undergraduate mathematics program. These include:

Calculus, Advanced Calculus, Set Theory and Logic, Linear Programming, Numerical Analysis, Differential Equations, Geometry, Real Analysis, Complex Analysis, Linear Algebra, Abstract Algebra, Theory of Equations, Group Theory, Mathematical Logic, Axiomatic Set Theory, Discrete Mathematics, Statistics, Probability.

I have also taught graduate courses in Group Theory, Ring Theory, and Field and Galois Theory.

Supervision of Graduate Students.

I have supervised the following M.Sc theses at Yarmouk University :

1. Ibrahim Al-Ghrouz, Invariants of finite groups generated by pseudo-reflections (July 1985)
2. Hani Siam, Kaplansky's Test Problems (July 1986)
3. Hani Abbadi, Function Fields of Conics (May 1993)
4. Jawad Abu Hlail, Polynomial functions over finite fields (Sept. 1993)
5. Ameer Jaber, Negligibility of certain automorphisms on rational function fields (Dec. 1996)
6. Lucy Hazaimah, Positive Semi-Definite Forms (Aug. 2003)
7. Saja Hayajneh, Some questions in the theory of means (July 2007)
8. Mostafa Hayajneh, Properties of certain classes of simplices (April 2010)
9. Hiba Shehadeh, Decomposing a group into a finite union of proper subgroups (May 2011)
10. Sana'a Khataybeh, Higher dimensional geometry involving semi-regular simplices (Dec. 2012)
11. Ahmad Hamdan, Properties of certain automorphisms of fields of rational functions (Dec. 26, 2012)
12. Amjad Al-Natour, Some aspects of Eisenstein's irreducibility criterion (May 21, 2015)
13. Amer Rawashdeh, Number theory theorems and conjectures in rings other than the ring of integers (August 13, 2015)
14. Raneem Ababneh (with advisor Malik Bataineh (JUST) and with me as a co-advisor), Covering linear spaces and other algebraic structures by a finite number of substructures (August 20, 2015)
15. Aisha Hayajneh, Centers of geometric figures (ongoing)

I have also served as a member of the committee administering the defense of several Ph.D and M. Sc. theses.

Participation in Conferences, Public Lectures, and Visitors.

1. I participated in the annual AMS / MAA meeting held in Denver (Colorado) in January 1983 by giving a talk entitled *Quasi-rationality, rationality and linearizability of cyclotomic automorphisms*. An abstract of the talk appeared in *Abstracts of AMS 4 (1983), 801-12-99*.
2. I participated in the annual AMS / MAA meeting held in Louisville (Kentucky) in January 1984 by giving a talk entitled *Negligibility of linear factors of automorphisms*. An abstract of the talk appeared in *Abstracts of AMS 5 (1984), 809-12-224*.
3. I participated in the annual AMS / MAA meeting held in Phoenix (Arizona) in January 1989 by giving a talk entitled *Monomial automorphisms of small order*. An abstract of the talk appeared in *Abstracts of AMS 1 (1989), 847-12-114*.
4. I participated in the first Jordanian Mathematical Conference held in Amman and Irbid in September 1991 by giving a talk entitled *A description of an algebraic automorphism in terms of the radical of its minimal polynomial*. The talk appeared in the Proceedings of that conference.
5. I participated in the 32nd Syrian Science Week held in Damascus in November 1992 by giving a talk entitled *Finite group actions on rational function fields*. The talk appeared in the Proceedings of the conference.
6. I hosted Professor Ming-chang Kang for a week in 1993.
7. I gave a public talk at the Schuman Institute entitled *Teaching Mathematics Through Islamic Art* on in 1995.
8. I participated in the *Colloque d'Algèbre et Théorie des Nombres* that was held at Université Sidi Mohamed Ben Abdellah (Fès - Morocco) in the period May 6 - May 11, 1997 by giving a 60-minute talk entitled *Linear and monomial automorphisms*. The talk appeared in the Proceedings of the conference published by Marcel Dekker in 2000.
9. I participated in the *Mathematics Education Conference* held held at the American University of Sharjah in April 2001 by giving two one-hour talks entitled *Mathematics and Islamic Art*.
10. I participated, as a keynote speaker, in the Fourth Jordanian Mathematical Conference held in Irbid in September 2004 by giving a talk entitled *Elementary issues in the theory of field automorphisms*.
11. I hosted Professor Horst Martini for about a week in December 2005.
12. I gave a public lecture entitled *Methods of Teaching at the University Level* at the *Center for Developing Performance of Faculty Members* (Yarmouk University) in 2006. The lecture was given again in 2007.

13. I participated, as a keynote speaker, in the Math Day held in Sharjah in April 2006 by giving a talk entitled *Elementary issues in the theory of means*.
14. I hosted Professors Horst Martini and Margarita Spirova for about a week in 2008.
15. I hosted Professor Peter Yff for 3 days in 2009.
16. I hosted Professor Horst Martini for about a week in December 2010.
17. I participated, as a keynote speaker, in the conference held at Zarqa University on April 27, 2011 by giving a talk entitled *Higher dimensional analogues of some interesting theorems of plane Euclidean geometry*.
18. I gave two invited lectures, one in Algebra and one in Geometry, at King Saud University (Riyadh) in the period Nov. 23 – Dec. 30, 2013.
19. I participated, as a keynote speaker, in the conference held at Zarqa University on April 24, 2014 by giving a talk entitled *Some elementary aspects of means*.
20. I participated in the Science Day held at Philadelphia University on May 22, 2014 by giving a talk entitled *From Pythagoras to Fermat* or *From Pythagoras to Wiles*.
21. I gave a public lecture entitled *Scientific Research at the Center for Developing Performance of Faculty Members* (Yarmouk University) in September 2015. The lecture was given again in April 2016.

Academic Awards and Grants.

1. I have been nominated *an Associate Member* of the *International Centre for Theoretical Physics* for the period Jan. 1, 1994 - Dec. 31, 1999.
2. I was awarded the *Award for Excellence in Teaching* by Yarmouk University for the year 1983/1984.
3. I was a recipient of the *National Science Foundation Grant* (MCS-7903057) for the period July 1979 - July 1981.

Membership in Professional Societies.

I have been a member in both *The American Mathematical Society* and *The Mathematical Association of America* since 1976. I am also a founding member of *The Jordanian Mathematical Society*.

Serving on Editorial Boards.

I have served on the editorial board of

- *Abhath El-Yarmouk*, the scientific journal of Yarmouk University, from 1982 to 1986, and have been on the advisory committee of the

- *Jordanian Journal of Mathematics and Statistics*

since it was founded in 2008. Last year, I served as the lead guest editor of a special issue on “Means and Their Inequalities” launched by

- *International Journal of Mathematics and Mathematical Sciences*.

I am also on the editorial board of

- *Journal of Geometry and Graphics*,

- *Journal of Mathematics*,

- *Conferences in Mathematics*,

- *International Journal of Geometry*.

Reviewing for Zentralblatt Math and Mathematical Reviews.

I have written more than 280 reviews for Zentralblatt Math and Mathematical Reviews. Ten of the reviews that I have written in the past three years found their way into the series *Excerpts from Zentralblatt Math* launched in 2010.

Refereeing for International Journals.

I have refereed articles for the following international journals:

1. Journal of Algebra
2. Communications in Algebra
3. Beitrage zur Algebra und Geometrie
4. Journal of Geometry
5. Journal of Geometry and Graphics
6. Forum Geometricorum
7. Mathematical Inequalities and Applications
8. Journal of Inequalities in Pure and Applied Mathematics
9. Journal of Inequalities and Applications
10. American Mathematical Monthly
11. Journal of Combinatorial Theory
12. International Journal of Mathematical Education in Science and Technology
13. The Open Mathematics Journal
14. Electronic Journal of Linear Algebra
15. The International Journal of Open Problems in Computer Science and Mathematics
16. Journal of Applied Mathematics
17. Acta Applicandae Mathematicae (ACAP)
18. Scientific Research Essays
19. International Electronic Journal of Geometry
20. Abstract and Applied Analysis
21. Journal of Mathematical Inequalities
22. Linear Algebra and Applications
23. Mathematics Magazine

Publications.

1981

1. On the rationality of monomial automorphisms, *J. Algebra* **73** (1981), 30-36.

1983

2. Rational invariants of meta-abelian groups of linear automorphisms, *J. Algebra* **80** (1983), 295-305.
3. A note on monomial automorphisms, *J. Algebra* **85** (1983), 243-250.

1985

4. A note on a result of Kuniyoshi, *J. Algebra* **92** (1985), 171-175.
5. Quasi-linearity of cyclic monomial automorphisms, *J. Algebra* **95** (1985), 473-479.

1987

6. Rationality of finite groups of monomial automorphisms on $k(x, y)$, *J. Algebra* **109** (1987), 46-51.

1989

7. The alternating functions of three and four variables, *Algebras Groups Geom.* **6** (1989), 49-54.
8. Invariants of certain algebraic automorphisms, *Algebras Groups Geom.* **6** (1989), 401-408.

1990

9. Linearizability and rationality of monomial automorphisms of small order, *J. Algebra* **130** (1990), 1-16.
10. A note on affine automorphisms, *Commun. Algebra* **18** (1990), 1535-1549.
11. A minimal example of a non-rational monomial automorphism, *Commun. Algebra* **18** (1990), 2423-2431.

1991

12. (with Reyadh Khazal) A note on algebraic automorphisms, *J. Algebra* **139** (1991), 336-341.
13. A note on linear automorphisms over \mathbb{R} , *Proc. Amer. Math. Soc.* **111** (1991), 29-34.

1992

14. (with Ming-chang Kang) Finite group actions on rational function fields, *J. Algebra* **149** (1992), 139-154.
15. A description of an algebraic automorphism in terms of the radical of its minimal polynomial, *Commun. Algebra* **20** (1992), 761-776.

1994

16. (with Ming-chang Kang and Jack Ohm) Function fields of conics as invariant subfields, *J. Algebra* **163** (1994), 383-403.
17. (with Ming-chang Kang) Three-dimensional purely monomial actions, *J. Algebra* **170** (1994), 805-860.
18. An advanced calculus approach to finding the Fermat point, *Math. Mag.* **67** (1994), 29-34.

1995

19. (with Ming-chang Kang) Some actions of symmetric groups, *J. Algebra* **177** (1995), 511-535.
20. A note on Ohm's rationality criterion for conics, *Bull. Austral. Math. Soc.* **51** (1995), 133-137.
21. A note on Hoare's cubic, *Math. Gaz.* **79** (1995), 99.
22. Another curious cubic, *Math. Gaz.* **79** (1995), 99-102.
23. (with Zuhair Abu-Abbas) A note on the Fermat point of the tetrahedron, *Math. Gaz.* **79** (1995), 117-118.

1996

24. (with Kkuloud Ghalieh) The Fermat point of a spherical triangle, *Math. Gaz.* **80** (1996), 561-564.

1997

25. (with Ming-chang Kang) Twisted actions of symmetric groups, *J. Algebra* **188** (1997), 626-647.
26. (with Jebrel M. Habeb) A note on semi-principal ideal rings, *Arab J. Sci. and Engrg.* **22**, No. 2A (1997), 195-206.
27. (with Sadi Abu-Saymeh) On the Fermat-Torricelli points of tetrahedra and of higher dimensional simplexes, *Math. Mag.* **70** (1997), 380-386.

1998

28. (with Hamza Ahmad and Ming-chang Kang) Negligibility of projective linear automorphisms, *J. Algebra* **199** (1998), 344-366.

1999

29. An analytical proof of the generalised Steiner-Lehmus theorem, *Math. Gaz.* **83** (1999), 493-495.

2000

30. (with Hamza Ahmad and Ming-chang Kang) Rationality of some projective linear actions, *J. Algebra* **228** (2000), 643-658.
31. Linear and Monomial Automorphisms : Some Elementary Issues, in *Algebra and Number Theory* (editors: M. Boulagouaz and J-P. Tignol), Marcel Dekker (2000), pp. 137-148.
32. What do the cycles of a given length generate?, *Math. Gaz.* **84** (2000), 97-98.
33. A note on Maekawa's trigonometric inequality, *Math. Gaz.* **84** (2000), 501-502.

2001

34. A vector proof of a theorem of Bang, *Amer. Math. Monthly* **108** (2001), 562-564.
35. Other versions of the Steiner-Lehmus theorem, *Amer. Math. Monthly* **108** (2001), 760-767.
36. Triangle centers : some questions in euclidean geometry, *Internat. J. Math. Ed. Sci. Tech.* **32** (2001), 21-37.
37. (with Peter Walker) Equifacial Tetrahedra, *Internat. J. Math. Ed. Sci. Tech.* **32** (2001), 501-508.
38. (with Peter Walker) Why must the triangle's medians be concurrent?, *Math. Gaz.* **85** (2001), 481-482.
39. A trigonometric identity that G. S. Carr missed and a trigonometry proof of a theorem of Bang, *Math. Gaz.* **85** (2001), 293-296.

2002

40. (with Peter Walker) The Gergonne and Nagel centers of a tetrahedron, *J. Geom.* **75** (2002), 106-112.
41. (with Peter Walker) The measure of solid angles in n -dimensional euclidean space, *Internat. J. Math. Ed. Sci. Tech.* **33** (2002), 725-729.

2003

42. (with Jebrel M. Habeb) A note on trigonometric identities, *Expo. Math.* **21** (2003), 285-290.
43. Radical and rational means of degree two, *Math. Inequal. Appl.* **6** (2003), 581-593.

44. (with Raghil Abu Saris) Quadratic means, *J. Math. Anal. Appl.* **288** (2003), 299-313.

2004

45. An elementary proof of *the most elementary theorem in Euclidean geometry*, *J. Geom. Graphics* **8** (2004), 17-22.
46. (with Peter Walker) The inspherical Gergonne center of a tetrahedron, *J. Geom. Graphics* **8** (2004), 23-32.
47. (with Jebrel M. Habeb) Diagonal \mathbb{Z} -automorphisms on $\mathbb{Z}[x_1, \dots, x_n]$, *Algebras Groups Geom.* **21** (2004), 201-210.
48. (with Fathi Saidi) A note on Bang's theorem on equifacial tetrahedra, *J. Geom. Graphics* **8** (2004), 163-169.

2005

49. Copositive symmetric cubic forms, *Amer. Math. Monthly* **112** (2005), 462-466.
50. The Gergonne and Nagel centers of an n -dimensional simplex, *J. Geom.* **83** (2005), 46-56.
51. (with Sadi Abu-Saymeh) Triangle centers with linear intercepts and linear subangles, *Forum Geom.* **5** (2005), 33-36.
52. (with Sadi Abu-Saymeh) Some Brocard-like points of a triangle, *Forum Geom.* **5** (2005), 65-74.
53. (with Sadi Abu-Saymeh) In search of more triangle centres, *Internat. J. Math. Ed. Sci. Tech.* **36** (2005), 889-912.
54. (with Allan L. Edmonds and H. Martini) Orthocentric simplices and their centers, *Results Math.* **47** (2005), 266-295.
55. (with Allan L. Edmonds and H. Martini) Coincidences of simplex centers and related facial structures, *Beitr. Algebra Geom.* **46** (2005), 491-512.
56. (with Peter Walker) Equifaciality of tetrahedra whose incenter and Fermat-Torricelli center coincide, *J. Geom. Graphics* **9** (2005), 37-41.

2006

57. The arbitrariness of the cevian triangle, *Amer. Math. Monthly* **113** (2006), 443-447.
58. A very short and simple proof of the most elementary theorem in Euclidean geometry, *Forum Geom.* **6** (2006), 167-169.
59. Coincidences of centers in edge-incentric, or balloon, simplices, *Results Math.* **49** (2006), 237-263.
60. (with Raghil Abu Saris) On Gauss compounding of symmetric weighted arithmetic means, *J. Math. Anal. Appl.* **322** (2006), 729-734.

61. (with Raghieb Abu-Saris) Geometric means of two positive numbers, *Math. Inequal. Appl.* **9** (2006), 391-406.
62. (with Horst Martini), A note on similar-perspective triangles, *J. Geom. Graphics* **10** (2006), 133-136.
63. (with Margarita Spirova) A characterization of the centroid using June Lester's shape function, *Forum Geom.* **6** (2006), 53-55.
64. (with Horst Martini and Margarita Spirova) On converses of Napoleon's theorem and a modified shape function, *Beitr. Algebra Geom.* **47** (2006), 363-383.

2007

65. A method for establishing certain trigonometric inequalities, *J. Inequal. Pure Appl. Math (JIPAM)* **8** (2007), Art. 29, 11 pp.
66. (with Raghieb Abu-Saris) Internal cubic symmetric forms in a small number of variables, *Math. Inequal. Appl.* **10** (2007), 863-868.
67. (with Ahmad Al-Salman) Towards a well-defined median, *J. Math. Inequal.* **1** (2007), 23-30.
68. (with Sadi Abu-Saymeh) Coincidence of centers for scalene triangles, *Forum Geom.* **7** (2007), 137-146.
69. (with Sadi Abu-Saymeh and H. Stachel) Another cubic curve associated with the triangle, *J. Geom. Graphics* **11** (2007), 15-26.
70. (with Peter Yff) The isoperimetric point and the point(s) of equal detour in a triangle, *J. Geom.* **87** (2007), 76-82.

2008

71. A short trigonometric proof of the Steiner-Lehmus theorem, *Forum Geom.* **8** (2008), 39-43.
72. A condition for a circumscribable quadrilateral to be cyclic *Forum Geom.* **8** (2008), 103-106.
73. Stronger forms of the Steiner-Lehmus theorem, *Forum Geom.* **8** (2008), 157-161.
74. (with Sadi Abu-Saymeh) The Archimedean arbelos in 3-space, *Results Math.* **52** (2008), 1-16.
75. (with Sadi Abu-Saymeh and Hassan A. ShahAli) Another variation on the Steiner-Lehmus theme, *Forum Geom.*, **8** (2008), 131-140.
76. (with Hamza Ahmad) Relative negligibility of linear automorphisms, *J. Algebra* **320** (2008), 1182-1199.
77. (with Allan L. Edmonds and Horst Martini) Orthocentric simplices and biregularity, *Results Math.* **52** (2008), 41-50.

78. (with Jebrel M. Habeb) A method for establishing certain trigonometric inequalities involving the cotangents of the angles of a triangle, *J. Geom. Graphics* **12** (2008), 11–21.
79. (with Horst Martini and Margarita Spirova) New extensions of Napoleon’s theorem to higher dimensions. *Beitr. Algebra Geom.* **49** (2008), 253–264.
80. (with Margarita Spirova) A new line in the plane of the triangle, *Elem. Math.* **63** (2008), 165–172.

2009

81. The pons asinorum for tetrahedra, *J. Geom.* **93** (2009), 71–82.
82. The pons asinorum in higher dimensions, *Studia Sci. Math. Hungarica* **46** (2009), 263–273.
83. On nested sequences of triangles, *Results Math.* **54** (2009), 289–299.
84. Extrema of $xy + yz + zx$ when $x + y + z$ and xyz are constant, *Math. Gaz.* **93** (2009), 301–305.
85. On a morsel of Ross Honsberger, *Math. Gaz.* **93** (2009), 309–312.
86. (with Raghil Abu-Saris) The chaotic behavior of the sequence of pedal simplices, *Results Math.* **55** (2009), 71–82.
87. (with Abdalla Al-Sharif and Panagiotis Krasopoulos) Coincidences of centers of a plane quadrilateral, *Results Math.* **55** (2009), 231–247.

2010

88. Generalized Napoleon and Torricelli transformations and their iterations, *Beitr. Algebra Geom.* **51** (2010), 171–190.
89. The nested sequence of generalized median triangles and a new shape function, *J. Geom.* **96** (2010), 71–79.
90. Another morsel of Honsberger. *Math. Mag.* **83** (2010), 279–283.
91. Popularising the ASS pseudo-congruence theorem, *Math. Gaz.* **94** (2010), 41–44.
92. (with Sadi Abu-Saymeh) More on the Steiner-Lehmus theorem, *J. Geom. Graphics* **14** (2010), 127–133.

2011

93. (with Panagiotis Krasopoulos) Two more triangle centers, *Elem. Math.* **66** (2011), 164–174.
94. What do permutations of a given cycle pattern generate? *Math. Gaz.* **95** (2011), 341–342.

2012

95. The pons asinorum and other related theorems for tetrahedra, *Beitr. Algebra Geom.* **53** (2012), 487–505.
96. Extremal properties of the incentre and the excentres of a triangle, *Math. Gaz.* **96** (2012), 62–64.
97. Algorithms for calculating the inverse of a given R -automorphism on $R[x]$, *Commun. Algebra* **40:11** (2012), 4031–4041.
98. Lack of relative monotonicity among various measures of trihedral angles, *J. Geom.* **103** (2012), 237–246.
99. (with Jebrel M. Habeb and William J. Heinzer) Conjugacy classes and invariant subrings of R -automorphisms of $R[x]$. *Commun. Algebra* **40:4** (2012), 1496–1524.
100. (with Sadi Abu-Saymeh) Equicevian points on the altitude of a triangle, *Elem. Math.* **67** (2012), 187–195.
101. (with Sadi Abu-Saymeh and Mostafa Hayajneh) The open mouth theorem, or the scissors lemma, for orthocentric tetrahedra, *J. Geom.* **103** (2012), 1–16.
102. (with Mostafa Hayajneh) The open mouth theorem in higher dimensions, *Linear Algebra Appl.* **437** (2012), 1057–1069.

2013

103. (with Horst Martini) Orthocentric simplices as the true generalizations of triangles, *Math. Intelligencer* **35**, no. 3, (2013), 16–28.
104. (with Horst Martini) Concurrency of the altitudes of a triangle, *Math. Semesterberichte* **60** (2013), 249–260.
105. (with Horst Martini) On Proposition 21 of Book I of Euclid's *Elements*: Variations, Generalizations, and Classroom Exercises, *Mitt. Math. Ges. Hamburg* **33** (2013), 135–159.
106. The integrating factors of an exact differential equation, *Math. Mag.* **86** (2013), 220–226.
107. Some elementary aspects of means, *Internat. J. Math. Math. Sci., Means & Their Inequalities, Special Issue*, **2013** (2013), Article ID 689560, 9 pp.

2014

108. (with Ismail Hammoudeh) The sum of measures of the angles of a simplex, *Beitr. Algebra Geom.* **55** (2014), 453–470.
109. (with Mostafa Hayajneh) Impurity of the corner angles in certain special families of simplices, *J. Geom.* **105** (2014), 539–560.
110. (with Sadi Abu-Saymeh and Hellmuth Stachel) Equicevian points and cubics of a triangle, *J. Geom. Graphics* **18** (2014), No. 2, 133–155.

2015

111. A generalized Cauchy-Schwarz inequality, *Math. Inequal. Appl.* **18** (2015), 893–899.
112. (with Ismail Hammoudeh and Mostafa Hayajneh) Kites as the only doubly special simplices, *Beitr. Algebra Geom.* **56** (2015), 269–277.
113. Some open problems in concurrences, *Math. Gaz.* **99** (March 2015), 2–10.
114. The simplest proof ever of the pons asinorum theorem, *Math. Gaz.* **99** (July 2015), 341–342.
115. (with Qassem M. Al-Hassan) A simple derivation of the eigenvalues of a tridiagonal matrix arising in biogeography, *Appl. Math.* **42** (2015), 23–27.
116. (with Sadi Abu-Saymeh and Hellmuth Stachel) Equicevian points of a triangle, *Amer. Math. Monthly* **122** (2015), 995–1000.
117. On the fixed area property of the hyperbola, *Mitt. Math. Ges. Hamburg* **35** (2015), 55–66.

2016

118. (with Mostafa Hayajneh and Horst Martini) More characterizations of certain special classes of simplices, *Results Math.* **69** (2016), 23–47.
119. (with A. Zachos) A complete analytical treatment of the weighted Fermat-Torricelli point of a triangle, *J. Geometry*, 13 pp., appeared online, March 30, 2016.
doi:10.1007/s00022-016-0327-1

To appear

120. (with Hassan A. ShahAli) A concise proof of a one-parameter family of geometric inequalities, *J. Math. Inequal.*, 9 pp.
121. The maximal property of cyclic quadrilaterals, *Math. Gaz.* **100** (July 2016), 2 pp.
122. A very short trigonometric proof of the Steiner-Lehmus theorem, *Mitt. Math. Ges. Hamburg* **36** (November 2016), 2 pp.
123. The sum of the squared lengths of equally spaced-cevians, *Math. Gaz.* **101** (March 2017), 3 pages,

Submitted

124. An application of a morsel of Honsberger's, *Math. Gaz.*, 3 pages,
125. (with Mostafa Hayajneh, Van Bach, and Shadi Shaqaqha, Distances from the vertices of a regular simplex, 17 pp.
126. (with Mostafa Hayajneh and Ismail Hammoudeh) Pre-kites: Simplices having a regular facet, 21 pp.

Problem Proposals

1. Problem A-6473, *Amer. Math. Monthly* **91** (1984), 519; Solution, *ibid* **93** (1986), 219.
2. Problem 10315, *Amer. Math. Monthly* **100** (1993), 589; Solution, *ibid* **103** (1996), 349.
3. Problem 10399, *Amer. Math. Monthly* **101** (1994), 682; Solution, *ibid* **104** (1997), 279.
4. A letter to the editor, *Math. Gaz.* **83** (1999), 135-136.
5. (with P. Walker), Problem 10771, *Amer. Math. Monthly* **106** (1999), 963; Solution, *ibid* **107** (2000), 954-955.
6. Problem 1677, *Math. Mag.* **76** (2003), 318; Solution, *ibid* **77** (2004), 321-322.
7. Quickie Q927, *Math. Mag.* **76** (2003), 68.
8. (with P. Walker) Quickie Q936, *Math. Mag.* **76** (2003), 400.
9. Problem 1704, *Math. Mag.* **77** (2004), 320; Solution, *ibid* **78** (2005), 326-327.
10. Problem 1711, *Math. Mag.* **78** (2005), 68; Solution, *ibid* **79** (2006), 68-69.
11. Problem 1731, *Math. Mag.* **78** (2005), 404; Solution, *ibid* **79** (2006), 394-395.
12. (with S. Abu-Saymeh) Quickie 955, *Math. Mag.* **78** (2005), 405.
13. Problem 1767, *Math. Mag.* **80** (2007), 145; Solution, *ibid* **81** (2008), 157.
14. Problem 1771, *Math. Mag.* **80** (2007), 230; Solution, *ibid* **81** (2008), 221-222.
15. Quickie 978, *Math. Mag.* **81** (2008), 64.
16. Problem 1791, *Math. Mag.* **81** (2008), 155; Solution, *ibid* **82** (2009), 148-149.
17. (with A. Al-Sharif) Problem 1821, *Math. Mag.* **82** (2009), 228; Solution, *ibid* **83** (2010), 227-229.
18. (with P. Krasopoulos) Problem 1275, *Elem. Math.* **65** (No. 1) (2010), 37.
19. (with S. Abu-Saymeh) Problem 922, *College Math. J.* **41** (2010), 131; Solution, *ibid* **42** (2011), 155.
20. Problem 926, *College Math. J.* **41** (2010), 242; Solution, *ibid* **42** (2011), 235-236.
21. Quickie 1006, *Math. Mag.* **83** (2010), 392; solution, *ibid*, 397.
22. (with S. Abu-Saymeh) Problem 1866, *Math. Mag.* **84** (2011), 150; solution, *ibid* **85** (2012), 151-152.

23. (with T. Fraiwan) Q1012, *Math. Mag.* **84** (2011), 230; solution, *ibid*, 236–237.
24. Problem 11598, *Amer. Math. Monthly* **118** (2011), 748.
25. (with S. Abu-Saymeh) Problem 1298, *Elem. Math.* **66** (2011), 174; solution, *ibid* **67** (2012), 198–199.
26. (with S. Abu-Saymeh) Problem 95.A, *Math. Gaz.* **95** (March 2011), 133; solution, *ibid*, **95** (Nov. 2011), 563–564.
27. (with T. Fraiwan) Problem 966, *College Math. J.* **43** (2012), 95; solution, *ibid* **44** (2013), 66–67.
28. Problem 11636, *Amer. Math. Monthly*, **119** (2012), 344; solution, *ibid*, **120** (2013), 90.
29. (with Ahmad Hamdan) Quickie 1024, *Math. Mag.* **85** (2012), 296; solution, *ibid*, 301.
30. (with S. Abu-Saymeh) Problem 1911, *Math. Mag.* **86** (2013), 63; solution, *ibid*, **87**, 63.
31. Problem 1002, *College Math. J.* **44** (2013), 233; correction, *ibid*, 437.
32. A letter to the editor, *Math. Mag.* **86** (2013), 398.
33. Quickie Q1033, *Math. Mag.* **86** (2013), 289; solution, *ibid*, 294.
34. Quickie Q1037, *Math. Mag.* **87** (Feb. 2014), 62; solution, *ibid*, 68.
35. (with Mostafa Hayajneh) Problem 1944, *Math. Mag.* **87** (April 2014), 152; solution, *ibid*, **88** (June 2015), 240–241.

Textbooks.

I have participated in writing the following two textbooks in Arabic for *The Open University of Jerusalem*:

1. (with S. Abu-Saymeh and Jebrel Habeb), *Number Theory*.
2. (with M. Hailat and M. Khanfar), *Linear Algebra*.