

**ACROSS**

1. Fake fight
5. Santa \_\_\_\_ (hot California winds)
9. Sight-related
14. Rice-shaped pasta
15. How Julius Caesar would write 2040
16. Marx brother
17. Takes an exam, in England
18. Number like 3 and 21
20. "Don't make \_\_\_\_!"
22. Thread holder
23. Number like 1.2904
26. Number like 55-Across
30. Salt Lake City native
32. A letter of the Greek alphabet
33. Neighborhood where you'd find a bodega
35. "Lost" creator J.J.
38. Number like 36
40. Treat with element #53, in Britain
41. Stories in une maison
42. Special effects in blockbusters: Abbr.
43. Digital book files
44. Number like two of the third roots of unity
48. Number like 12345
53. Large animal that represented the Egyptian god Set
55. A letter of the Greek alphabet
56. Number like e
61. Grp. for those over 50
62. Long, drawn-out attack
63. French town almost completely destroyed in the Battle of Normandy (partial abbr.)
64. No-\_\_\_\_ condition: assumption that a viscous fluid has zero velocity relative to the boundary
65. More puzzling (not more like the number 7)
66. Number like 8842
67. Nine-digit IDs

**DOWN**

1. "Too bad, \_\_\_\_ . . ."
2. Number like 5
3. Central American civilization that used a base 20 number system
4. "Arrested Development" actress Portia de \_\_\_\_\_, or Manhattan Project physicist Bruno
5. Qty.

6. Spectroscopy method commonly used to gain information about the structure of organic molecules: Abbr.
7. There's one for x, y, and z
8. Apply quickly, like a sticker
9. "This is not good!"
10. 1945 Nobelist in Physics
11. Former MTV show hosted by Carson Daly
12. Typically very hoppy beer
13. It follows a thm.
19. Word that pairs with "neither"
21. Papa, Brainy, Harmony, and Handy, e.g.
24. Up \_\_\_\_ (stuck)
25. Of the flock, not the clergy
27. Approaches
28. "Don't look \_\_\_\_ like that!"
29. \_\_\_ Vegas
31. Egyptian for "be at peace", part of the name of a famous Egyptian chancellor and high priest
33. Darken
34. Current NPR White House correspondent Shapiro
35. Port city in Jordan that will be home to the world's only Star Trek-themed park
36. Pestors into doing, as in a task
37. Singer Corinne Bailey \_\_\_ or Carly \_\_\_ Jepsen
38. Stick that uses a spring
39. Star Trek phrase: "Set phasers to \_\_\_\_!"
40. Intl. justice group created in 2002 and headquartered in The Hague
43. Reveal
45. Antibacterial virus
46. Volume of a cube with side length 10 centimeters
47. Prefix with -morphism
49. Amherst sch. where mathematician Marshall Stone taught from 1968 to 1980
50. Numbers like -7 and pi
51. Line from a Lewis Carroll book: "I've often seen a cat without \_\_\_\_\_," thought Alice; "but \_\_\_\_\_ without a cat!"
52. Northern Scandinavians
54. "As seen \_\_\_\_!"
56. Prefix with -morphism
57. Free (of)
58. You might make a graph's edge this color
59. Part of 12-Down
60. Actor Chaney or Chaney Jr.

## Types Theory

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1	2	3	4		5	6	7	8		9	10	11	12	13
14					15					16				
17					18					19				
20				21			22							
23					24	25		26				27	28	29
				30			31					32		
			33	34						35	36	37		
	38							39						
40							41							
42						43								
44			45	46	47			48			49	50	51	52
			53				54			55				
56	57	58						59	60		61			
62							63				64			
65							66				67			

Clues are at left, on page 196. The solution is on page 211.

Extra copies of the puzzle, in both .pdf and .puz (AcrossLite) formats, can be found at the Magazine's website, or (temporarily) at <http://www.mathematicsmagazine.org>.

angles of the triangle to be trisectible, the rational cosine values must meet certain conditions. Using some elementary aspects of the theory of constructible numbers, we obtain several general methods for finding triangles that meet our conditions, then present some examples and explore a few properties of these triangles.

**RUSSELL A. GORDON** received his Ph.D. from the University of Illinois in 1987, writing his dissertation under the influence of Jerry Uhl. He has been teaching mathematics at Whitman College since then and is becoming increasingly aware that his current students believe that 1987 was a long time ago. Attending a Ke\$ha concert with his teenage son while working on this paper helped convince his students that he is not completely ignorant of twenty-first century pop culture. When not pursuing various mathematical ideas, he enjoys eating his spouse's wonderful vegetarian cooking (for which doing the dishes is a small price to pay), watching movies with his family, and hiking in the local mountains.

Solution to puzzle on page 197:

1	S	2	P	3	A	4	R		5	A	6	N	7	A	8	S		9	O	10	P	11	T	12	I	13	C	
14	O	R	Z	O					15	M	M	X	L					16	H	A	R	P	O					
17	S	I	T	S					18	T	R	I	A	19	N	G	U	L	A	R								
20	A	M	E	S	21	S								22	S	P	O	O	L									
23	D	E	C	I	M	24	A	L	25					26	O	R	D	I	27	N	A	L						
									30	U	T	A	H	N									32	E	T	A		
									33	B	A	R	R	I	O				35	A	B	R	A	M	S			
									38	P	E	R	F	E	C	T	S	39	S	Q	U	A	R	E				
40	I	O	D	I	S	E								41	E	T	A	G	E	S								
42	C	G	I											43	E	P	U	B	S									
44	C	O	M	45	P	L	E	X						48	N	A	T	49	U	R	A	L						
									53	H	I	P	P	O	54							55	O	M	E	G	A	
56	I	57	R	58	R	A	T	I	O	N	A	L									61	A	A	R	P			
62	S	I	E	G	E									63	S	T	L	O					64	S	L	I	P	
65	O	D	D	E	R									66	E	V	E	N					67	S	S	N	S	