

State of Confusion

THIS ISSUE'S PUZZLE

Part 1 of this puzzle takes place in the State of Confusion, where the insurance market is split among four carriers: Adversity Insurance, Bad Luck Insurance, Calamity Insurance, and Disaster Insurance. One day, the state's attorney general noticed that Adversity had a lot more clients than any of the other carriers.

"Hmm, there must be something illegal at work here," he thought, and scheduled a press conference to announce an upcoming lawsuit against Adversity.

The bad publicity caused an immediate reaction—clients abandoned Adversity in droves and switched to one of the other three carriers. By the next day, each of the other three companies had three times the number of clients they previously had.

After the suit was settled, the attorney general noticed that Bad Luck now had more clients than the other carriers. Another press conference followed, and once again the fickle public responded by leaving Bad Luck. The other three companies (including Adversity) saw their business triple.

A few months later, when the attorney general noticed that Calamity was now the largest company, he held another press conference. And, once again, clients moved, tripling the size of the other three companies. A few months after that, the attorney general struck Disaster. And, as you have probably guessed, the business at the other three carriers tripled.

With these four-high profile cases completed, the attorney general felt pretty pleased with himself. He had brought equality to the State of Confusion's insurance market! This was clearly so, because now that he was done, all four companies had exactly the same number of clients.

"Well," he thought, "that's settled! I guess I'll run for Governor."

You can assume that no clients entered or left the market over the course of this story and that clients switched carriers only when a suit was brought. What was the original

market share of each company? (Since there are an integer number of clients, the answer should be expressed as a fraction.)

That ends Part 1, but I can't stop there or this would be too easy. Part 2 takes place in the next state over from the State of Confusion: the State of Paranoia. There, the insurance market is divided among N carriers, but I'm afraid to tell you what N is. I will tell you that, if they went through the same process as in Part 1, with the largest carrier losing enough business to the others to triple their books N times in succession, in the end each of the N carriers would have an equal number of clients. What is the market share of the N carriers?

PREVIOUS ISSUE PUZZLES

Track and Field Competition

Three small state colleges participated in a track and field competition. Each college sent only one representative to each event. Jessica, a student at Kennedy College, went to the competition to cheer on her boyfriend, the school's long-jump champion.

When she returned to campus later in the afternoon, her roommate, Kelly, asked how their school had performed. "We won the long jump," Jessica said, "but Jefferson College won the competition overall with a score of 22 points. Both our school and Adams College had only 9 points."

"What was the point system?" Kelly asked.

"I really don't remember," Jessica said, "but they gave a different number of points for each place. They even awarded points for third place. The point system was the same for each event."

"How many events were there in total?" Kelly asked.

"Hey, I didn't pay attention," protested Jessica. "I spent my time watching the long jump."

"Was there a javelin throw?" asked Jack, Kelly's friend.

"Come to think of it, there was," Jessica said.

"Who won it?" asked Jack.

"I don't know," replied Jessica.

But you should. Who won the javelin throw? Show all your work.

Answer: Jefferson College

Solution

Three different integers indicate points for first, second, and third place in each event. The lowest possible award for first place is three points. We know that there were at least two events (long jump and javelin throw). Since Kennedy College got nine points total, the award for first place cannot be larger than nine. We can rule out eight points for first place since that would mean that only two events occurred and the winner (Jefferson College) couldn't have amassed 22 points. The same argument applies to seven points—there would have to be three events, but even then the winner couldn't amass 22 points. Somewhat involved arguments eliminate three, four, and six as first-place awards. The only possibility then is five points for the first-place award.

If five is the value, then there must have been at least five events because Jefferson couldn't have gotten 22 points on fewer events and more than five events would raise Kennedy's point total above nine. Kennedy got five points for long jump and one point for all other events. There are two ways for Jefferson to build up 22 points: four, five, five, five, three, or two, five, five,

Solutions may be e-mailed to cont.puzzles@gmail.com or mailed to Puzzles, 65 W. 35th Place, Eugene, Ore. 97405.

You will note that these are new addresses! In order to make the solver list, please make sure that your answers and solutions are received by Jan. 31, 2008. Depending on the response volume solver lists may contain only the names of people who solved puzzles on the first attempt.

five, five. We can eliminate the first because of the variety of scores, so the latter must be correct. The points for Adams go as follows: one, two, two, two, two. Since Jefferson won all events except the long jump, it consequently must have won the javelin throw.

Chess Puzzle

White to move and mate in three

Position:

White – Kc6, Qe5.

Black – Ka6, Ba3, pawns b2, c5, c7.

Solutions—Case A

Qg3 b1N

Qxc7 Nc3

Qb6#

Solutions—Case B

Qg3 Bb4

Qxc7 Ba5

Qb7#

SOLVER LISTS

Because of an administrative deadline, names of only those people who submitted correct solutions by Nov. 30, 2007, are shown on the lists.

Track and Field Puzzle: Jon Anderson, Dennis Barry, Bob Bartholomew, Richard Bottelli, Bob Byrne, Bill Carroll, Jason Choi, Chris Coleiamne, William Cross, Edgar Cruz, Daniel Czabaj, Mark Danburg-Wyld, Andrew Dean, Michael Dekker, Paul Cennee, Darrell Doddridge, Lance Dyrland, Brian Eastman, Ryan Elmore, Andrew Erman, Mark Evans, Mike Failor, Bill Feldman, Jonathan Ferron, Chris Fievoli, William Fornia, Nick Franceschine, Bruce Fuller, Christine Gemmett, Andrew Gordon, Mike Gross, Rui Guo, Yehuda Haber, John Herder, Geof Hileman, Bob Howard, John Hubenschmidt, Jim Jerome, Robert Kahn, Stuart Klugman, Alex Kozmin, Gregory Kushnir, Chi Kwok, Bruno Lemay, Bob Lemke, Kevin Levin, Douglas Levy, John McCarthy, Charles McLeod, Dennis McNeese, Kurt Meisinger, Lee Michelson, Philip Morse, Paul Navratil, Joshua Niccley, Chris Norman, David Oakden, Don Onnen, Stephen Peoples, Jim Pelant, Tim Pollis, David Promislow, Joe Rakstad, Allen Rothman, Jason Russ, Steven Russ, Gerry Samp, Jeff Schwarze, Bill Scott, Noam Segal, Ted Shively, Leonid Shteyman, Philip Silverman, William Slattery, David Smead, Sally Smith, John Snyder, Don Sondergeld, Liu Songan, Al Spooner, Tony Torelli, Kevin Trapp, Mike

Weingartner, Virginia Young, Paolo Zadra.

Chess Puzzle: Steven Azar, Alexander Bavalsky, Robert Burrell, Bill Carroll, Hobson Carroll, Marc Dreyfuss, Brian Eastman, Andrew Gordon, Wade Hess, Robert Kahn, Todd Kennedy, Robert Koch, Alex Kozmin, Philip Lehpamer, Bruno Lemay, Ken Levin, Isaac MacDonald, James Marks, Mark Mercier, John McCarthy, Lee Michelson, Chris Norman, David Oakden, Don Onnen, Harry Ploss, Hugh Ramler, Jason Russ, Noam Segal, Don Sondergeld, Kevin Trapp, Lee Zinzow.

These were my last puzzles as editor of *Contingencies'* puzzle page. I hope that you have enjoyed my puzzles as much as I have enjoyed discussing them with all of you.

I would like to recognize the following 11 readers who submitted correct solutions for all logic puzzles in 2007: Bob Bartholmew, Bob Byrne, Bill Carroll, Mike Failor, John Hubenschmidt, Lee Michelson, David Oakden, Stephen Peoples, David Promislow, Leonid Shteyman, Al Spooner, and Tony Torelli. Recognition is also due to the following three readers who submitted correct solutions for all chess puzzles in 2007: Bill Carroll, Lee Michelson, and Harry Ploss.

I would also like to wish Mark Danburg-Wyld, *Contingencies'* new puzzle editor, good luck in this challenging position!
—Yan Fridman

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