

THE WILLIAM LOWELL PUTNAM MATHEMATICAL COMPETITION

ANNOUNCEMENT OF WINNERS

of the sixty-seventh competition held on December 2, 2006

WINNING TEAMS

<i>Rank</i>	<i>School</i>	<i>Team Members (in alphabetical order)</i>
1	PRINCETON UNIVERSITY	Ana Caraiani, Andrei Negut, and Aaron C. Pixton
2	HARVARD UNIVERSITY	Tiankai Liu, Alison B. Miller, and Tong Zhang
3	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Oleg Golberg, Daniel M. Kane, and Kuat T. Yessenov
4	UNIVERSITY OF TORONTO	Tianyi David Han, János Kramár, and Viktoriya Krakovna
5	UNIVERSITY OF CHICAGO	David Coley, Junehyuk Jung, and Zhiwei Calvin Lin

The first place team receives an award of \$25,000 and each member of the team receives \$1,000. The awards for second place are \$20,000 and \$800; for third place \$15,000 and \$600; for fourth place \$10,000 and \$400; and for fifth place \$5,000 and \$200.

In each of the following categories, the listing is in alphabetical order.

THE PUTNAM FELLOWS—THE FIVE HIGHEST RANKING INDIVIDUALS

Each receives an award of \$2,500.

HANSHENG DIAO	Massachusetts Institute of Technology
DANIEL M. KANE	Massachusetts Institute of Technology
TIANKAI LIU	Harvard University
PO-RU LOH	California Institute of Technology
YUFEI ZHAO	Massachusetts Institute of Technology

THE NEXT TEN HIGHEST RANKING INDIVIDUALS

Each receives an award of \$1,000.

TIMOTHY G. ABBOTT	Massachusetts Institute of Technology
RALPH C. FURMANIAK	University of Waterloo
ANDERS H. KASEORG	Massachusetts Institute of Technology
SUNGYOON KIM	Massachusetts Institute of Technology
YUNCHENG LIN	Massachusetts Institute of Technology
ALISON B. MILLER	Harvard University
KEVIN P. MODZELEWSKI	Massachusetts Institute of Technology
ANDREI NEGUT	Princeton University
AARON C. PIXTON	Princeton University
ERIC C. PRICE	Massachusetts Institute of Technology

THE NEXT ELEVEN HIGHEST RANKING INDIVIDUALS

Each receives an award of \$250.

SARAN AHUJA	Brown University
PARK DOO SUNG	California Institute of Technology
SHINN-YIH HUANG	Massachusetts Institute of Technology
MATTHEW M. INCE	Massachusetts Institute of Technology
THEODORE P. JOHNSON-FREYD	Stanford University
CEDRIC LIN	University of British Columbia
THOMAS J. MILDORF	Massachusetts Institute of Technology
XUANCHENG SHAO	Massachusetts Institute of Technology
ANDREI B. UNGUREANU	Princeton University
YEOIL YOON	California Institute of Technology
RUMEN IVANOV ZAREV	California Institute of Technology

HONORABLE MENTION—TEAMS

UNIVERSITY OF BRITISH COLUMBIA
BROWN UNIVERSITY
DUKE UNIVERSITY
HARVEY MUDD COLLEGE
STANFORD UNIVERSITY
WASHINGTON UNIVERSITY, ST. LOUIS

Farzin Barekat, Cedric Lin, and Samuel Wong
Saran Ahuja, Paul Levande, and Adam Merberg
Kshipra Bhawalkar, Nikifor Bliznashki, and Lingren Zhang
Greg Minton, Brian T. Rice, and Theodore C. Spaide
Serin Hong, Robert D. Hough, and Kiat Chuan Tan
Justin Gilmer, Jonathan Pinyan, and Eric R. Wofsey

HONORABLE MENTION—INDIVIDUALS

ZACHARY R. ABEL, Harvard University
JAE M. BAE, Harvard University
JARED A. BASS, Harvard University
RICHARD V. BIGGS, Carnegie-Mellon University
CHRISTOPHER M. BREAUX, Stanford University
STEVEN J. F. BYRNES, Harvard University
ANA CARAIANI, Princeton University
CHARLES CHEN, Harvard University
BENJAMIN J. CONLÉE, Harvard University
PETER Z. DIAO, Princeton University
EVAN P. DUMMIT, California Institute of Technology
OLEG GOLBERG, Massachusetts Institute of Technology
RISHI V. GUPTA, Harvard University
TIANYI DAVID HAN, University of Toronto
SERIN HONG, Stanford University
LOZAN M. IVANOV, California Institute of Technology
DANIEL C. JERISON, Harvard University
JOHN Y. KIM, Massachusetts Institute of Technology
JÁNOS KRAMÁR, University of Toronto
GABRIEL E. KREINDLER, Princeton University
DANIEL T. LE, Stanford University
JOEL B. LEWIS, Harvard University
ZHIWEI CALVIN LIN, University of Chicago
MARK I. LIPSON, Harvard University
ANTON S. MALYSHEV, Princeton University
DRAGOS I. MICHNEA, Harvard University

MARIA J. MONKS, Massachusetts Institute of Technology
TOR GUNNAR-MYKLEBUST, University of Waterloo
ALBERT R. NI, Massachusetts Institute of Technology
DIMITER V. OSTREV, Yale University
NATHAN K. PFLUEGER, Stanford University
JONATHAN PINYAN, Washington University, St. Louis
WEI QUAN JULIUS POH, Cornell University
AARON H. POTECHIN, Princeton University
GREGORY N. PRICE, Harvard University
ANAND B. RAJAGOPALAN, Massachusetts Institute of Technology
BRIAN T. RICE, Harvey Mudd College
SHUBHANGI SARAF, Massachusetts Institute of Technology
NIKHIL A. SAVALE, Massachusetts Institute of Technology
PENG SHI, Duke University
CHARMAINE J. SIA, Massachusetts Institute of Technology
DIMITAR SIMEONOV, Massachusetts Institute of Technology
KIAT CHUAN TAN, Stanford University
KENNETH TAY, Princeton University
JASON A. TRIGG, Massachusetts Institute of Technology
WUTTISAK TRONGSIRIWAT, University of Virginia
ILIYA T. TSEKOV, Massachusetts Institute of Technology
XIAO HENG WANG, University of Waterloo
MENG-HSUAN WU, Stanford University
KUAT T. YESSENOV, Massachusetts Institute of Technology
TONG ZHANG, Harvard University
YOU ZHOU, Massachusetts Institute of Technology

ELIZABETH LOWELL PUTNAM PRIZE

Winner receives an award of \$1,000.

ALISON B. MILLER

Harvard University

QUESTIONS COMMITTEE

Titu Andreescu, University of Texas, Dallas (Chair); Greg Kuperberg, University of California, Davis; and Steven Tschanz, Vanderbilt University.

A total of 3640 students from 508 colleges and universities in Canada and the United States participated in the Competition. There were teams from 402 institutions. More complete details will appear in the *American Mathematical Monthly*.

THE WILLIAM LOWELL PUTNAM MATHEMATICAL COMPETITION

March 1, 2007

Dear Colleague:

Enclosed is a report on your contestants in the 67th Competition and your team rank (if it was in the range 1—150), a list of the top 500 contestants (which you may wish to share with your committee on graduate students), an announcement of winners, and a list of participating schools. Some tables are given below. Your contributions to the Competition are greatly appreciated.

Leonard F. Klosinski, Director
Gerald L. Alexanderson, Associate Director
Loren C. Larson, Associate Director

<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>
101	1	70	25	55	74	38	166	27	294	12	544
99	2	69	28	53	76.5	37	174.5	26	296	11	600.5
98	3	68	31.5	52	82	36	177	25	297	10	747
92	4.5	67	34.5	51	86.5	35	179	24	300	9	890
88	6	66	37.5	50	92.5	34	180.5	23	305.5	8	937.5
87	7	65	40.5	49	100	33	182.5	22	320.5	7	961
86	9	64	42.5	48	106.5	32	185.5	21	342.5	6	962
84	11	63	44	47	113	31.9	189.5	20	390.5	5	963
81	13	62	46	46	117	31.8	193.5	19	445	4	971
80	15	61	49	44	119	31.7	196.5	18	475	3	992.5
78	16	60	52	43	120	31.6	198	17	490	2	1089
77	17.5	59	56	42	122.5	31	208.5	16	492	1	1266.5
76	19	58	61	41	127.5	30	239	15	493.5	0	2501
73	20	57	65.5	40	140	29	266	14	501		
71	22	56	70.5	39	154	28	282.5	13	511.5		

FREQUENCY DISTRIBUTION OF PROBLEM SCORES OF THE TOP 198 CONTESTANTS

	<u>A1</u>	<u>A2</u>	<u>A3</u>	<u>A4</u>	<u>A5</u>	<u>A6</u>	<u>B1</u>	<u>B2</u>	<u>B3</u>	<u>B4</u>	<u>B5</u>	<u>B6</u>	Total
10	129	96	63	112	16	1	52	123	15	22	93	6	728
9	3	37	17	17	3	0	13	28	12	7	17	2	156
8	11	30	13	0	3	0	54	16	23	4	6	0	160
7	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
2	6	4	6	3	5	0	4	3	54	9	6	7	107
1	2	4	0	6	5	2	2	0	25	17	1	5	69
0	47	27	39	32	46	58	30	13	33	91	15	42	473
blank	0	0	60	28	120	137	43	15	36	48	60	136	683