WSMA Math Bowl - March 29, 2014

College Bowl Round 1 Proctors' Answer Sheet

1	If there are 4 Mugwumps in a Thugwump and 5 Pugwumps in a Thugwump, how many Mugwumps are in 20 Pugwumps?	16
2	Jonas and Julia are going to the movies. If Jerry is supposed to work at the movie theater 4 random days a week, but only shows up to work 4/7ths of the time, what is the chance that Jonas and Julia see Jerry?	4/7
3	Romil solved 11 problems on BNG. The BNG Consists of 15 ordered, numbered questions. It is known that he did not solve at least 9 problems in a row. What is the number of ways he could of solved 11 problems?	1290
4	Circle A and circle B have two different external tangents, each of length 10 and 15. What is the product of their radi?	125/4
5	How many distinct full houses can be created with a standard deck of 52 cards? A full house is a combination of 3 cards of the same number and 2 other cards of a different number.	3744
6	Three circles with radius 1 are drawn such that they all pass through the centers of the other two circles. What is the area of the region shared by all three?	1/2pi-sqrt(3)/2 or (pi-sqrt(3))/2
7	What is the difference between the number of possible ways to divide 9 books into groups of 2, 3, and 4 and the number of ways to split them into groups of 3, 3, and 3 books?	980
Extra	Zach is distributing candy to a number of children. If he gives 3 pieces of candy to each child, he will have 8 pieces that are not distributed. If he distributes 5 pieces per child, the last child will receive less than 5 pieces. Find the sum of all possible numbers of children.	11