

MEET 5

5A Puzzle Problems (20 minutes)

- Word problems, one or more variables
- Max-min problems not requiring calculus
- Problems found in "brain-teaser" type books
- Logic puzzles, including the use of Venn Diagrams
- **2013-2014 Challenge Topic: Alphametics**

5B Congruence and Similarity

- Ratio and proportion
- Segments intercepted by parallel lines
- Identification of similar/congruent figures
- Ratios of areas and volumes
- Elementary trigonometric ratios

5C Counting and Probability

- Permutations, with and without replacement
- Combinations, with and without replacement
- Using the principle of inclusion, exclusion
- Using the binomial and multinomial expansions
- Nonnegative integer solutions to $x_1+x_2+\dots+x_n = b$.
- Definition, simple applications of probability (when to multiply, when to add)

5D Variations of Problems appearing on the previous year's AMC 12 (contest A and B)