

The Nine Chapters on the Mathematical Art Contest (NCC) 2014

Time: 1 hour and 15 minutes.

New for 2014: Separate prizes will be awarded to the top students in grade 3 and the top students in grade 4. However, they will still be writing the same sections on the contest.

Instructions

- **Do not look at the questions until you are instructed to do so.**
- **Calculators are permitted.** You are also allowed to use rulers, compasses, and graph paper. You will be given scrap paper for working.
- **At the beginning of the contest, verify that you have the correct contest sections in front of you.** The sections you should have in front of you depend on your grade, as explained below.
- **Write down your name on every page.**
- **Do not write anything on the answer sheet other than the answers and your name.** This is a fill-in-the-blank test. Use the scrap paper for your work.

Information About the Questions

- You will be given 3 contest sections, depending on your year of birth:
 - If you were born in 2006 or 2005, you will get sections A, B, and C.
 - If you were born in 2004 or 2003, you will get sections B, C, and D.
 - If you were born in 2002 or 2001, you will get sections C, D, and E.
 - If you were born in 2000 or 1999, you will get sections D, E, and F.
- The sections A, B, C, D, E, and F are in roughly increasing order of difficulty.
- Each of the sections has 8 questions, so each student will be solving 24 questions.
- Each question is worth 5 points, so the maximum possible score is 120.
- Diagrams are not necessarily drawn to scale. They are merely intended to help you understand the question.

Writing Down Your Answers

- If there are many ways to write the right answer, then any way is fine (for example, $\frac{1}{2}$ and 0.5 are both valid answers).
- Exact answers are required (for example, write $\frac{1}{3}$ instead of 0.3333 with 3's going on forever).
- Your answers should be in simplest form.
- Don't worry about units.

Additional Information

- Questions, solutions, results, and awards will be posted on the Grand River Chinese School website once the contests are marked. The website is <http://grandriverchineseschool.com/default.aspx>
- NCC 2014 is intended to be a warm-up for math contests that should be held at your regular school during the year. They can be found at the following websites:
<http://cemc.uwaterloo.ca/contests/contests.html>
<http://www.mathematica.ca/eng/index.htm>