

Student Name: _____

Please write your name on *every* page.

The Nine Chapters on the Mathematical Art Contest

November 19, 2016

Time: 1 hour and 15 minutes.

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 2008 or 2007, you will get sections A, B, and C.
 - If you were born in 2006 or 2005, you will get sections B, C, and D.
 - If you were born in 2004 or 2003, you will get sections C, D, and E.
 - If you were born in 2002 or 2001, 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 in total. 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). 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 2016 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>