

Lectures on Contest Mathematics

ES2A⁺ – Olympiad Navigation on Algebra

Summer 2011

Zuming Feng
Phillips Exeter Academy and IDEA Math
zfeng@exeter.edu

©Copyright 2008 – 2011 Idea Math

Idea Math
Internal Use

Copyright © 2008-2011 IDEA MATH.

“Cogito ergo Sum” – “I think, therefore I am”

René Descartes (1596-1650)

©Copyright 2008 – 2011 Idea Math

Idea Math
Internal Use

Contents

©Copyright 2008 – 2011 Idea Math

| | |
|---|----------|
| Algebra | 1 |
| 1.1 Algebra 7.1 | 1 |
| 1.2 Algebra 7.2 | 3 |
| 1.3 Challenges on sums and products | 4 |
| 1.4 More challenging systems equations | 6 |
| 1.5 Complex numbers and recursions | 8 |
| 1.6 Really challenging special equations | 10 |
| 1.7 Really challenging systems equations | 11 |
| 1.8 Challenges with sequences, series, and products | 13 |
| 1.9 Challenges with zeros and coefficients | 15 |
| 1.10 Techniques in solving inequalities – dealing with the denominators | 16 |

Idea Math
Internal Use