



Reasoning

"Mathematical reasoning helps students think logically and make sense of mathematics." (pg. 9)

"The thinking skills developed by focusing on reasoning can be used in daily life in a wide variety of contexts and disciplines." (pg. 9)

(The Alberta 10-12 Mathematics Programs of Study with Achievement Indicators 2008, Alberta Education)

Seven Mathematical Processes

- Communication
- Connections
- Mental Mathematics and Estimation
- Problem Solving
- **Reasoning**
- Technology
- Visualization

Thoughts on Reasoning

The following are examples where inductive and deductive reasoning may be used throughout the mathematics curriculum:



M30-1 Trigonometric Identities

Known Identities are used to prove new Identities.

Strategies for Proving Trigonometric Identities ([Original](#) & [KEY](#))

M20-2 If this is true ... then ...

The premise behind these activities is that students have to look at the true statements that are given and use reasoning to then be able to solve further problems.

- M20-2 Add & Subtract Radicals ([Original](#) & [KEY](#))
- M20-2 Multiply Radicals ([Original](#) & [KEY](#))
- M20-2 Divide Radicals ([Original](#) & [KEY](#))

M10-C Investigate Negative Exponents

This investigation asks students to explore what happens when exponents become negative.

Complete the first chart with the students and then ask them to do the next chart and continue with the questions on the next page.

For more information and additional supports for implementation, visit <http://erlc.ca/resources/filter.php?theme=11&title=Mathematics>