Foundations of Math 10 LG 1

EXPONENTS I

INTRODUCTION:

Exponents have been used to help solve problems since the time of the Babylonians about 4000 years ago….check out pages 150 & 151.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:

1) determine the square root and cube root of perfect squares and cubes.
2) apply the exponent laws to simplify expressions with integral exponents.

EVALUATION:

You are ready to progress to the next learning guide when you can demonstrate your understanding of the above expectations. Please refer to your Mathematics 10 Foundations Marks Record Sheet to determine the assessment.

RESOURCES NEEDED:

Mathematics 10 Text

Square dot paper

LEARNING ACTIVITIES:

Expectation #1: Determine the square root and cube root of perfect squares and cubes.

1. Watch and take notes on instructional video on perfect squares and square roots.
2. Watch and take notes on instructional video on perfect cubes and cube roots.
3. Read page 152. Complete the Investigate Square Roots and Cube Roots question #1, 3a,c.
4. Read Link the Ideas on page 153 & 154.
5. Work through Example 1 on pages 154 & 155.
6. Complete page 158 #5.
7. Work through Example 2 on page 156.
8. Read the Key Ideas on page 157.
9. In your Math Journal, define *perfect cube* and *cube root*. Give an example of each. Describe how you would determine what the square root or the cube root of a number is.

10. Complete questions #1, 2, 3, 4, 6, 8, 9, 10, 11, 17 on pages 158-160.
11. For extra practice, click here. For the answers to the extra practice, click here.

Expectation #2: Apply the exponent laws to simplify expressions with integral exponents.

1. Watch and take notes on instructional video on Integral Exponents.
2. Complete the Investigate Negative Exponents on page 163 questions 1-5.
3. Read Link the Ideas on page 164 and work through Example 1.
4. Complete question #4a,b,c on page 169.
5. Work through Examples 2 and 3 on pages 166 and 167.
6. Complete question #4d-i on page 169.
7. Read Key Ideas on page 168.
8. In your Math Journal, make a list of the following exponent laws: Negative exponent, product of powers, quotient of powers, power of a power, power of a product, power of a quotient and zero exponent. Use an example of your own to illustrate each law.
9. Complete #2, 3, 5, 6, 7, 10, 13, 15, 18 on pages 169-172.
10. For extra practice, click here. For the answers to the extra practice, click here.

REVIEW AND CHALLENGE

1. Complete Chapter 4 Review pages 196-197 #1 – 10.

PRACTICE QUIZZES

Practice quiz #1 (only do questions #1-6)
Practice quiz #2
Practice quiz #3
Practice quiz #4
Practice quiz #5