

Math 8 LG 4

PYTHAGOREAN RELATIONSHIP

INTRODUCTION:

The Pythagorean Relationship is a very important concept and one you will use in future math courses right through to grade 12.... Check out Chapter 3 Opener pages 76 & 77.

LEARNING GUIDE EXPECTATIONS:

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


- 1) find the squares and square roots of whole numbers.
- 2) determine whether a triangle is a right triangle.
- 3) estimate the square roots of whole numbers.
- 4) apply the Pythagorean relationship to find missing dimensions of triangles.

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 8 Marks Record Sheet to determine the assessment.

RESOURCES NEEDED:

 Math Links 8 Text

 THSS Math 8 Learning Guides and Math 8 Journal Entries Package

 Square tiles.

 Centimetre grid paper

 Scissors

 Transparent tape

 Protractor

 Ruler

LEARNING ACTIVITIES:



Expectation #1: Find the squares and square roots of whole numbers.



1. [Watch and take notes on instructional video on Squares.](#)



2. [Watch and take notes on instructional video on Square Roots.](#)



3. In the Math Links 8 text, read the introduction on Chapter 3 Section 3.1 page 80 and then complete the Explore the Math activity on Chapter 3 Section 3.1 pages 80-81.
4. In the Math Links 8 text, work through Example 1 on Chapter 3 Section 3.1 page 82. Now complete Chapter 3 Section 3.1 #5, 7, 8 on page 85.
5. In the Math Links 8 text, work through Example 2 on Chapter 3 Section 3.1 page 83. Now complete Chapter 3 Section 3.1 #9-12 on page 85.
6. In the Math Links 8 text, work through Example 3 on Chapter 3 Section 3.1 pages 83-84. Now complete Chapter 3 Section 3.1 #13-16 on pages 85-86.



7. Read Key Ideas on Chapter 3 Section 3.1 page 84. In your math journal, complete the journal entry for LG4 Expectation 1.



8. In the Math Links 8 text, complete Chapter 3 Section 3.1 #17, 18, 19, 21, 24, 25a,b,c,d on pages 86-87.



Expectation #2: Determine whether a triangle is a right triangle.



1. [Watch and take notes on instructional video on the Pythagorean Relationship.](#)



2. In the Math Links 8 text, read the introduction on Chapter 3 Section 3.2 page 88 and then complete the Explore the Math activity on Chapter 3 Section 3.2 pages 88-89. In step #3, the table has been provided in your Journal.
3. In the Math Links 8 text, work through Example 1 on Chapter 3 Section 3.2 page 90. Now complete Chapter 3 Section 3.2 #4, 5, 6 on pages 92-93.
4. In the Math Links 8 text, work through Example 2 on Chapter 3 Section 3.2 pages 90-91. Now complete Chapter 3 Section 3.2 #8, 9, 10 on page 92.



5. Read Key Ideas on Chapter 3 Section 3.2 page 91. In your math journal, complete the journal entry for LG4 Expectation 2.



6. In the Math Links 8 text, complete Chapter 3 Section 3.2 #12, 13, 17, 18, 21 on pages 93-94.



Expectation #3: Estimate the square roots of whole numbers.



1. [Watch and take notes on instructional video on Estimating Square Roots.](#)



2. In the Math Links 8 text, read the introduction on Chapter 3 Section 3.3 page 95 and then complete the Explore the Math activity on Chapter 3 Section 3.3 page 95.

3. In the Math Links 8 text, work through Example 1 on Chapter 3 Section 3.3 page 96. Now complete Chapter 3 Section 3.3 #4, 5 on pages 99.

4. In the Math Links 8 text, work through Example 2 on Chapter 3 Section 3.3 pages 97. Now complete Chapter 3 Section 3.3 #6-9 on page 99.



5. Read Key Ideas on Chapter 3 Section 3.3 page 98. In your math journal, complete the journal entry for LG4 Expectation 3.



6. In the Math Links 8 text, complete Chapter 3 Section 3.3 #10, 12, 14, 15, 17 on pages 99-100.



Expectation #4: Apply the Pythagorean relationship to find missing dimensions of triangles.



1. [Watch and take notes on instructional video on Using the Pythagorean Relationship.](#)



2. In the Math Links 8 text, read the introduction on Chapter 3 Section 3.4 page 101 and then complete the Explore the Math activity on Chapter 3 Section 3.4 page 101.

3. In the Math Links 8 text, work through Example 1 on Chapter 3 Section 3.4 page 102. Now complete Chapter 3 Section 3.4 #3-5 on page 104.

4. In the Math Links 8 text, work through Example 2 on Chapter 3 Section 3.4 pages 102. Now complete Chapter 3 Section 3.4 #6, 7 on page 104.



5. Read Key Ideas on Chapter 3 Section 3.4 page 103. In your math journal, complete the journal entry for LG4 Expectation 4.



6. In the Math Links 8 text, complete Chapter 3 Section 3.4 #8, 9, 10, 11, 13 on pages 104-105.

7. In the Math Links 8 text, complete Chapter 3 Section 3.5 #3, 4, 6, 8, 12, 13 on pages 110-111.

REVIEW AND CHALLENGE



1. In the Math Links 8 text, complete Chapter 3 Review pages 112-113 #1-10, 12-14, 16, 17.