Foundations of Math 11 LG 6&7
Acute Triangle Trigonometry

INTRODUCTION:

Who would need to know an accurate distance from Yellowknife to Winnipeg? Why can you not use sine, cosine, or tangent ratios directly to determine the distance? Check out pages 112-113.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to develop your spatial sense by:

1) using the sine law to determine side lengths and angle measures in acute triangles.
2) using the cosine law to determine side lengths and angle measures in acute triangles.
3) solving problems that can be modeled using acute 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 Foundations of Mathematics 11 Marks Record Sheet to determine the assessment.

RESOURCES NEEDED:

Foundations of Mathematics 11 Text.

THSS Math 11 Foundations Learning Guides.

www.thssmath.com

LEARNING ACTIVITIES:

Expectation #1: Using the sine law to determine side lengths and angle measures in acute triangles.

1. Watch and take notes on instructional video on the Sine Law.

2. In the Foundations of Mathematics 11 text, read pages 114-117 and make sure you pay attention to the green boxes and work through EXPLORE the Math on page 116. Complete **Reflecting** on page 116 (A-D) and FURTHER Your Understanding #2 and #4 on page 117.

3. Work through INVESTIGATE the Math on pages 118-119. Complete **Reflecting** on

page 119 (G-I).

4. Work through Example 1 on page 120. Complete **Your Turn** on page 120.
5. Work through Example 2 on page 121.
6. Work through Example 3 on pages 122-123. Complete **Your Turn** on page 123.

7. Complete #2, 3, 4, 6, 7, 13, 15 on pages 124-127.

8. In your math journal, complete the journal entry for LG6&7 Expectation 1 after you read the **In Summary** box on p. 117.

9. In your math journal, complete the journal entry for LG6&7 Expectation 1 after you read the **In Summary** box on p. 124.

Expectation #2: Using the cosine law to determine side lengths and angle measures in acute triangles.

1. Watch and take notes on instructional video on the Cosine Law.

2. Read pages 130 & 131 and work through **Reflecting (G-I)** on page 131.
3. Read page 132 and work through Example 1 on page 132. Complete **Your Turn** on page 132.
4. Read pages 133-134 and work through Example 2 on pages 133-134. Complete **Your Turn** on page 134.
5. Read page 135 and work through Example 3.
6. Complete #2, 3, 4, 5, 7, 9, 13 on pages 136-139.

7. In your math journal, complete the journal entry for LG6&7 Expectation 2 after you read the **In Summary** box on p. 136.

Expectation #3: Solving problems that can be modeled using acute triangles.

1. Watch and take notes on instructional video on the Solving Problems with Sine and Cosine Law in Acute Triangles.

2. Read pages 140-142 and work through Example 1. Complete **Reflecting (A-C)** on page 143.
3. Read pages 143-144 and work through Example 2. Complete **Your Turn** on page 144.
4. Read page 145 and work through Example 3. Complete **Your Turn** on page 146.
5. Complete #1, 2a, 3, 4, 5, 8, 9 on pages 147-150.

6. In your math journal, complete the journal entry for LG6&7 Expectation 3 after you read the **In Summary** box on p. 146.

✔ REVIEW AND CHALLENGE

Important Terms For This Learning Guide

☐ Sine Law
☐ Cosine Law

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1. In the Foundations of Mathematics 11 read History | Connection (Fire Towers and Lookouts) and complete A & B on page 150.

2. Complete **PRACTISING** #2, 4, 5, 7 & 9 on page 129.

3. Complete #1-8 Chapter Self-Test on page 152.

4. Read page 153 and complete #1-12 Chapter 3 Review on page 154.

PRACTICE QUIZZES

Practice quiz #1
Practice quiz #2
Practice quiz #3
Practice quiz #4
Practice quiz #5