Foundations of Math 11 LG 13
Systems of Linear Inequalities

INTRODUCTION:

Want to make money? Mastering linear inequalities can lead you to making the correct decisions toward economic success. Check out chapter 6 on page 291 to learn about the basics of linear inequalities.

LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to develop your statistical reasoning ability by:

1) Modelling and solving problems algebraically and graphically using linear inequalities in two variables.

2) Modelling and solving problems algebraically and graphically using systems of linear inequalities in two variables.

3) Solving optimization problems using linear programming.

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 and possible Internet access (http://www.youtube.com/user/RobbWorld#g/p).

LEARNING ACTIVITIES:

Expectation #1: Modelling and solving problems algebraically and graphically using linear inequalities in two variables.

1. Watch and take notes on instructional video on Graphing Linear Inequalities.

2. Work through INVESTIGATE the Math on pages 294. Complete **Reflecting** on page 294 (F-H).
3. Work through Example 1 on pages 295-297. Complete **Your Turn** on page 297.
4. Work through Example 2 on pages 298-299. Complete **Your Turn** on page 299.
5. Work through Example 3 on pages 300-301. Complete **Your Turn** on page 301.

6. In your math journal, complete the journal entry for LG13Expectation 1 after you read the **In Summary** box on p. 302.
7. Complete #1, 2, 3, 4, 5, 6, 7, 8 & 9 on pages 303-305.

8. In your math journal, complete the journal entry for LG13Expectation 1 after you read the **In Summary** box on p.307.

9. Complete #1, 2 on page 307.

Expectation #2: Modelling and solving problems algebraically and graphically using systems of linear inequalities in two variables.

1. [Watch and take notes on instructional video on Graphing Systems of Linear Inequalities.](#)

2. Work through Example 1 on pages 308-311. Complete **Reflecting** (A-D) on page 311.

3. Work through Example 2 on pages 312-314. Complete **Your Turn** on page 314.

4. Work through Example 3 on pages 315-316. Complete **Your Turn** page 316.

5. In your math journal, complete the journal entry for LG13 Expectation 2 after you read the **In Summary** box on p.317.

6. Complete #1, 2, 3, 4, 5, 6, 7, 8 & 9 on pages 317-319.

Expectation #3: Solving optimization problems using linear programming.

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

2. Work through Example 1 on pages 336-338. Complete **Reflecting** (A-C) on page 338.

3. Work through Example 2 on pages 338-340. Complete **Your Turn** on page 340.

4. In your math journal, complete the journal entry for LG13 Expectation 3 after you read the **In Summary** boxes on pages 329, 333 & 341.

5. Complete #1, 2, 3, 4, 5 & 6 on pages 341-344.

REVIEW AND CHALLENGE

Important Terms For This Learning Guide	
☐ linear inequality	☐ optimal solution
☐ solution set	☐ linear programming
☐ solution region	☐ objective function
☐ half plane	☐ feasible region
☐ discrete	
☐ system of linear inequalities	
☐ optimization problem	
☐ constraint	

1. Complete **PRACTISING** #1, 2, 4, 5 & 7 page 323.

2. Complete #1-4 Chapter Self-Test on page 347.

3. Read page 348 and complete #1, 2, 3, 4a, 7, 10 & 11 Chapter 6 Review on pages 348-350.

PRACTICE QUIZZES

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