An Economic Interpretation of Duality Зачетное задание для студентов РАФ и РГФ

И. В. Семушин

Информационные технологии Ульяновский государственный университет

Методы оптимальных решений Самостоятельная работа декабрь 2009





Зачетное задание—Quiz Assignment

- Problem Statement
 - Direct Problem
 - Dual Problem
 - Assignment for your individual quiz work
- Paper Organization
 - Structuring your paper
- 3 Вопросы & Ответы
 - Q & A





The Direct Problem Statement

The Almine Coal Company has four mines. Each mine produces three types of coal, as shown in the following table.





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Mine		_		Cost of operation (in thousands of dollars)	
	Тур	e of			
	А	В	С		
	4	5	3	4	
	2	1		2	
	3	2	5	3	
$ \vee $	4	2	6	3	
Orders	20		40		



Direct Problem

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(1)
4		•

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	Тур	e of	coal	
	Α	В	С	
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Ш	3	2	5	3
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The Dual Problem Statement

Another company shows its interest and makes an offer

- However, they do not have the distribution capability of Almine.
- They offer to operate Almine's facilities and then sell the coal, already sorted by type, to Almine.
 - Kraye & Sons' problem is to find an offer, attractive to Almine, which produces the greatest profit for them.





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Then do the following assignments:

Solve the both, direct and dual, problems manually using Simplex Method.





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Then do the following assignments:

- (to view, go backwards)
- Solve the both, direct and dual, problems automatically using the SimplexWin program.





For each problem, first define

- What are the unknowns?
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Then do the following assignments:

- (to view, go backwards)
- 2 (to view, go backwards)
- 3 Give your written explanations to your solutions.



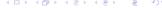


Problem Statement

Organize your written work as follows

Begin your text with the standard title sheet.





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Contents

- 1 Introduction [Briefly, what your paper is about]
- 2 Duality in Linear Programming [optional]
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СЕМУШИН Иннокентий Васильевич

профессор, доктор технических наук Математика и Информационные технологии

ул. Л. Толстого, 42 (для писем) Набережная р. Свияга, кор. 1 тел.: (8422) 32-32-47, факс: (8422) 41-23-40 e-mail: innokentiyvsem@gmail.com

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