Chapter 3: Convexity

The Separation Theorem (3.24; read proof in 4.28)
Farkas' Lemma (3.30; read proof in 10.10)
Characterization of convex functions in C^1 (3.40)

Chapter 4: Primal optimality conditions

The Fundamental Theorem of global optimality (4.3)
Necessary optimality conditions, C^1 case (4.23)
Necessary and sufficient global optimality conditions (4.24)
The Separation Theorem (4.28)

Chapter 5: Primal–dual optimality conditions

Karush–Kuhn–Tucker necessary conditions (5.25)
Karush–Kuhn–Tucker necessary conditions (5.33)
[(5.25) and (5.33) are proven similarly.]
Sufficiency of the Karush–Kuhn–Tucker conditions for convex problems (5.45)

Chapter 6: Lagrangian duality

Relaxation Theorem (6.1)
Weak Duality Theorem (6.5)
Global optimality conditions in the absence of a duality gap (6.7)

Chapter 8: Linear programming models

Existence and properties of optimal solutions (8.10)

Chapter 9: The Simplex method

Finiteness of the Simplex method (9.11)

Chapter 10: LP duality and sensitivity analysis

Weak Duality Theorem (10.4)
Strong Duality Theorem (10.6)
Farkas' Lemma (10.10)
Complementarity Slackness Theorem (10.11)
Complementarity Slackness Theorem (10.12)
Necessary and sufficient conditions for global optimality (10.15)
[(10.11), (10.12) and (10.15) are proven similarly.]

Chapter 13: Constrained optimization

Global convergence of a penalty method (13.3)