Contents

Preface ix

Henri Darmon and Shou-Wu Zhang

Heegner Points: The Beginnings 1

Bryan Birch

Correspondence 11

Bryan Birch and Benedict Gross

The Gauss Class Number Problem for Imaginary Quadratic Fields 25

Dorian Goldfeld

Heegner Points and Representation Theory 37

Benedict Gross

Gross–Zagier Revisited 67

Brian Conrad (with an appendix by W. R. Mann)

Special Value Formulae for Rankin $L$-Functions 165

Vinayak Vatsal

Gross-Zagier Formula for GL(2), II 191

Shou-Wu Zhang

Special Cycles and Derivatives of Eisenstein Series 243

Stephen Kudla

Faltings’ Height and the Derivatives of Eisenstein Series 271

Tonghai Yang

Elliptic Curves and Analogies Between Number Fields and Function Fields 285

Douglas Ulmer

Heegner Points and Elliptic Curves of Large Rank over Function Fields 317

Henri Darmon