**Proof - Plot Synopsis:**

The play concerns Catherine, the daughter of Robert, a recently deceased mathematical genius and professor at the University of Chicago, and her struggle with mathematical genius and mental illness. Catherine had cared for her father through a lengthy mental illness. Upon Robert's death, his ex-graduate student Hal discovers a paradigm-shifting proof about prime numbers in Robert's office. The title refers both to that proof and to the play's central question: Can Catherine prove the proof's authorship? Along with demonstrating the proof's authenticity, the daughter also finds herself in a relationship with 28-year-old Hal. Throughout, the play explores Catherine's fear of following in her father's footsteps, both mathematically and mentally.

**Proof - Characters:**

**Robert** was a famous mathematician who has just died of a heart attack in his fifties. He is already dead when the play begins, but he appears in the first scene in Catherine's imagination and returns in two later scenes, which flash back to earlier years. Robert was a mathematical genius. When he was in his early twenties, he made major contributions to game theory, algebraic geometry, and nonlinear operator theory. While he was still in his twenties, Robert was afflicted by a serious mental illness, which dogged the remainder of his life. He became so incapacitated that his daughter Catherine had to stay at home to care for him. Robert had a deep affection for Catherine.

**Catherine** is Robert's twenty-five-year-old daughter. A college dropout, she has spent several years at home caring for her mentally ill father. Their relationship, although sometimes antagonistic on the surface, was sustained by strong mutual affection. Although she is a highly intelligent woman, she has no direction in life. Catherine is worried that she may inherit her father's illness, and the signs of mental instability are already there.

**Claire** is Catherine's twenty-nine-year-old efficient, practical, and successful sister. Unlike Catherine, she has inherited none of her father's erratic genius. Instead, she has made a career in New York as a currency analyst. Claire and Catherine have never gotten along well. Claire feels responsible for Catherine's welfare and wants her to move to New York, but Catherine resents what she sees as Claire's interference in her life.

**Hal** is a twenty-eight-year-old mathematician who teaches at the University of Chicago. He also plays drums in a rock band made up of mathematicians. Hal is a former student of Robert's, whom he admires immensely, not only for the brilliance of his achievements in mathematics but because Robert helped him through a bad patch in his doctoral studies. Hal first met Catherine briefly four years earlier, and when he meets her again, he tries to make friends with her, and quickly becomes romantically involved with her.