Problem 1: Due February 8 at 10:00 AM

1. Demand: $P(q) = a - bq$
2. Cost: $C(q) = cq$
3. $b \sim logN(\mu, \sigma)$

The firm wishes to maximize it's expected problem. Solve for the optimal quantity analytically. Then write a computer program that returns the numerical optimal quantity given any input vector (a, b, c, μ, σ).