1. Solve the following problem of Abu Kamil: Suppose 10 is divided into two parts and the product of one part by itself equals the product of the other part by the square root of 10. Find the parts.

2. Cite what you view as the major differences between Islamic mathematics and Greek mathematics. Ignore the obvious changes in emphasis from geometry to algebra. What about rigor? What about mathematical parochialism?

3. Show the essential step of Bombelli’s argument: if $2 + ib = \sqrt[3]{2 + 11i}$, then $b = 1$.

4. Show that trisecting the angle $60^\circ$ is equivalent to solving the cubic $y^3 - 3y = 1$. Then show that this cubic has no rational solutions.

5. Derive a solution of Bombelli’s equation $x^3 = 15x + 4$ as a sum or difference of cube roots of imaginary numbers.