Mathematics 3820H – Mathematics from medieval to modern times
Trent University, Fall 2012
Assignment #3
Due on Tuesday, 2 October, 2012.

1. Find out everything you can about Yusuf al-Mu'taman ibn Hūd and his main mathematical work, the *Kitāb al-Istikmāl*. Summarize what we know of both the man and his work in mathematics. Don't forget to cite your sources! *[10]*

Lobachevsky alone has looked on Beauty bare.
She curves in here, she curves in here. She curves out there.
Her parallel clefts come together to tease
In un-callipygianous-wise;
With fewer than one hundred eighty degrees
Her glorious triangle lies.
Her double-trumpet symmetry Riemann did not court –
His tastes to simpler-curvedness, the buxom Teuton sort!
An ellipse is fine for as far as it goes,
But modesty, away!
If I'm going to see Beauty without her clothes
Give me hyperbolas any old day.

The world is curves, I've heard it said,
And straightway in it nothing lies.
This then my wish, before I'm dead:
To look through Lobachevsky's eyes.

> *Roger Zelazny,* from his novel *Doorways in the Sand.*