Mathematics 3820H – Mathematics from medieval to modern times

Trent University, Fall 2012

Assignment #2

Due on Tuesday, 25 September, 2012.

Read pp. 1–21 of al-Kwarizmi's *Algebra* [1] and do the following problems:

1. State and prove the quadratic formula in modern algebraic notation. *[5]*
2. Compare and contrast al-Kwarizmi's understanding of the quadratic formula, as given in the reading, with our understanding of it. *[5]*

REFERENCE

1. *The Algebra of Mohammed ben Musa* [*i.e.* al-Kwarizmi], ed. and trans. by Frederic Rosen (London, 1831), which can be found (pdf) online at:
   http://www.wilbourhall.org/pdfs/The_Algebra_of_Mohammed_Ben_Musa2.pdf

Sonnet xlv

Euclid alone has looked on Beauty bare.
Let all who prate of Beauty hold their peace,
And lay them prone upon the earth and cease
To ponder on themselves, the while they stare
At nothing, intricately drawn nowhere
In shapes of shifting lineage; let geese
Gabble and hiss, but heroes seek release
From dusty bondage into luminious air.
O blinding hour, O holy, terrible day,
When first the shaft into his vision shone
Of light anatomized! Euclid alone
Has looked on Beauty bare. Fortunate they
Who, though once only and then but far away,
Have heard her massive sandal set on stone.

Edna St. Vincent Millay