MA 330 ASSIGNMENT # 3

Answers to problems may be handwritten.

(1) Show that 28 and 48 are not an amicable pair of numbers.
(2) Prove that Thabit's construction of amicable pairs of numbers is valid.
(3) Consider the equation $z^3 + az^2 + bz + c = 0$. Show that the substitution $x = z - \frac{a}{3}$ results in a cubic equation with no x^2 term. Explain why, if you can find solutions to cubic equations with no x^2 term, then you can find solutions to any cubic equation.
(4) Consider Figure 11 on page 150 of Episodes in the Mathematics of Medieval Islam. Explain, in your own words, why the length labeled y is a solution to the cubic equation $y^3 + my = n$.