Mathematics 3010, Summer 2009: Chapter 10 Problems

History

1. Who was the most prolific translator of ancient mathematical works into Latin?
2. Name two astronomical devices used in medieval Europe.
3. Levi ben Gerson uses a false "congruence theorem" for triangles in his work on figuring their sides. What is it, and why did he make this mistake?
4. What is odd about ben Gerson's treatment of the commutative property of multiplication?
5. Which English mathematician gave a treatment of Menelaus' theorems from plane and spherical geometry?
6. What error does Fibonacci make in his solution of the "lion in the pit" problem?
7. Why are all the area formulas in *The Perfection of Any Art* wrong?
8. How did Jordanus de Nemore treat "incommensurables"?

Mathematics:

1. Find three rational numbers x, y, and z, such that $x^2+5=y^2$, and $x^2-5=z^2$.
2. p. 360, #15
3. p. 361, #31
4. p. 360, #28
5. p. 359, #2
6. (p. 359 #3) A hare is 150 paces ahead of a hound that is pursuing him. If the hound covers 10 paces each time the hare covers 6, in how many paces will the hound overtake the hare?
7. Find the area of a regular pentagon of side length 2, and compare it to the value given by the formula $(3n^2-n)/2$ in the *Perfection of Any Art*.
8. p. 361, #34