

Mathematics 3010, Summer 2009: Ch. 9 Problems

History

1. Describe the Arabic number system before contact with India.
2. Where does the word "algorithm" come from?
3. What means did Islamic scholars use to justify their algebraic results?
4. Where does the word "algebra" come from?
5. Give three different values of pi used by the Islamic mathematicians.
6. What is a "versine"? Why was it used?
7. How accurate was al-Biruni's sine table?
8. How did Islamic mathematics treat "incommensurable" numbers?

Mathematics

1. p. 318 #1
2. p. 318 #2
3. p. 318 #6
4. p. 318 #7
5. p. 283 #8
6. Check al-Khayammi's solution of the cubic $x^3 + cx = d$ given on page 289.
7. Divide $x^2 + 6$ by $x + 3$ using the algorithm of al-Sawa'al.
8. Find a solution of $x^3 + 4x = 6$.