

Mathematics 3010, Summer 2009: Ch. 7 Problems

History

1. Did the 7th century Chinese seem to know that the earth was spherical?
2. What trigonometric function's values were tabulated by Yi Xing?
3. What value of pi is given in the *Nine Chapters*? What does Liu Hui say about this?
4. What was Zu Chongzhi's approximation for pi?
5. What is a possible real-world application of the Chinese remainder theorem?
6. What estimation does Li Ye use for pi? Why?
7. How did Li Ye's work resemble classical Greek mathematics?
8. Who introduced China to Western mathematics?

Mathematics – all do these and turn in on paper.

1. What is the smallest number whose remainder when divided by 7 is 5, when divided by 12 is 3, and when divided by 17 is 8?
2. Solve the system of equations
$$x + y = 120$$
$$3x + 7y = 520$$
using the method of surplus and deficiency.

Extra credit: Find the cube root of 2,048,383 using the method of Jia Xian