Homework 4
Due Friday, Feb. 29- Noon, 2008
Drop Box #8 Everitt Basement

1. Explain the following in as much detail as you can:
   A. What is the major drawback of X-ray imaging?
   B. Thinking along the same line, why is it a good idea to filter out low energy X-rays at the source?
   C. What are the three physical mechanisms of X-ray interactions with tissue? Which of these mechanisms provides the best contrast between tissue types at low X-ray energies? (30%)

2. A. Why does Compton scattering reduce image contrast?
   B. How does the antiscatter grid help to improve contrast? (20%)

3. Problem 1.14 in text. (20%) 

4. Match the following images to their respective sinograms (where the horizontal axis is angle, and vertical axis is position). Give a brief description of the reasons for each choice by discussing or pointing out relevant image features in the sinogram. (30%)

(a)       (b)

(c)       (d)