Assignment 7 (for discussion and quizzing at tutorial week of March 10, but not for hand-in)

- Read Lecture 7 and sections 5.1-5.3 from the textbook.
- Practice problem set:
- 5.1: # 1, 5, 8, 19, 23 p 369-371
- 5.2: # 1, 3, 7, 17, 21, 25, 27, 29, 33, 35, 37, 39, 41, 49, 50, 55, 56, 59, 63 p 382-384
- 5.3: # 7, 8, 13, 15, 21, 23, 29, 37, 41, 43, 45, 57, 63 p 394-395

Extra questions:

1. Evaluate
$$\lim_{n\to\infty} \frac{1}{n}\left(\sqrt{\frac{1}{n}} + \sqrt{\frac{2}{n}} + \sqrt{\frac{3}{n}} + \cdots + \sqrt{\frac{n}{n}}\right)$$
(Hint: Express the sum as a Riemann sum for a function defined on [0, 1].)

2. Prove that
$$\int_0^{\pi/6} \cos(x^2)\, dx \geq \frac{1}{2}$$
(Hint: Show that $\cos(x^2) \geq \cos x$ on $[0, \frac{\pi}{6}]$.)