Signal Compression (ECE 242) Gibson February 28, 2008 Handout #12

## Homework No. 6

## Due: March 6, 2008

- **1.** Problem 9.1 on page 302 of the text.
- **2.** Problem 9.3 on page 303 of the text.
- **3.** Problem 9.11 on page 304 of the text.
- **4.** Prove the Information Inequality (Divergence inequality) in two ways:

(a) Use the inequality 
$$\log_2 x \ge \left(1 - \frac{1}{x}\right) \log_2 e$$

(b) Jensen's inequality.