Instructions for the Week Beginning 29th October 2007

1 Reading

Read through sections 3.1, 3.2 and 3.3

2 Exercises

From 3.1: (5), (13), (17)
From 3.2: (1), 3, 5, 9, (12), (13), 17, 25
From 3.3: 1, 4, 5, 8, (11), 17, 19, (20)
A twenty minute quiz will be given on 2nd November, and will be based on the questions not in parentheses.

3 Problems

Fully worked solutions of the following are due by 5th November.

3.1 What happens when you square a random variable?

Let X be a continuous random variable with p.d.f f_X, and let $Y = X^2$. Show that:

$$f_Y(y) = \begin{cases} 0 & \text{if } y \leq 0 \\ \frac{1}{\sqrt{y}} f_X(\sqrt{y}) & \text{if } y > 0 \end{cases}$$