

# Probability Theory

## Key to the self evaluation quiz

1. For tightness, see Proposition 2.11, p. 55 of the lecture notes. For the inequality, see Proposition 2.17, p. 61 of the lecture notes.
2. See Example 2.16, 4), p. 60 of the lecture notes.
3. For symmetric stable distribution, see p. 62 of the lecture notes. For the second part,  $\beta = 1/\alpha$  where  $\alpha$  is the parameter of the symmetric stable distribution of  $X$ . For the justification, see Exercise 6.1, (a).
4. For Kolmogorov's 0 – 1 law, see Theorem 1.30, p. 28 of the lecture notes. For an application, see for example Chapter 1.4, p. 29 of the lecture notes.