IMM - DTU

02405 Probability
2004-4-15
BFN/bfn

Solution for exercise 5.3.6 in Pitman

Question a)

$$P(N(0,13) > 5) = 1 - \Phi\left(\frac{5}{\sqrt{13}}\right)$$

Question b)

$$1 - (1 - \Phi(1))^2$$

Question c) Drawing helpful, suggests that the following should be true

$$\Phi(1) - \Phi(-1)$$

Question d)

$$P(1 > \max(X,Y) - \min(X,Y) = P(1 > |X - Y|) = \Phi\left(\frac{1}{\sqrt{2}}\right) - \Phi\left(\frac{-1}{\sqrt{2}}\right)$$