

Tutorial Sheet 27 (Normal Distribution I)

1. Consider a standard normal variable Z . Find
 - a) $P(Z \leq 1.75)$
 - b) $P(Z > 0.56)$
 - c) $P(0 < Z < 2.0)$
 - d) $P(Z \leq -1.2)$

2. Consider a standard normal variable Z . Find c such that
 - a) $P(Z < c) = 0.8$
 - b) $P(Z < c) = 0.27$
 - c) $P(0 < Z < c) = 0.311$

3. Let X be a random variable with distribution $N(42.2, 9)$. Find the probability
 - a) $P(X < 47)$
 - b) $P(X > 44.0)$
 - c) $P(41.2 < X < 46.3)$

4. Given the normally distributed variable X with mean 18 and standard deviation 2.5, find
 - a) $P(X < 15)$
 - b) the value of k such that $P(X < k) = 0.2578$
 - c) the value of k such that $P(X > k) = 0.1593$