8. A news vendor buys a daily paper from a publisher for a unit price of £0.50 and sells it to members of the public for £0.90. Any papers left over at the end of the day have to be destroyed as the publisher is not prepared to pay for their return. Past experience indicates that the demand for this daily paper from members of the public is expected to be a rectangular distribution with the two extremes of the distribution being 90 and 110 copies per day.

(a) If the news vendor would like to maximise his profit how many copies of the paper should he order from the publisher?

(b) If the news vendor negotiates with the publisher to return any unsold copies of the paper and recover £0.15 per returned copy from the publisher what would the order quantity now be?

Suppose now that the demand from the public is taken to be a Normal distribution with mean 95 copies and variance 50. By making use of the table associated with the standard Normal distribution (with mean zero and variance one) presented below what now are your answers for (a) and (b) above?

Discuss how, in your view, probabilistic demand models can be used to help in planning the stock to be held in a shop specialising in daily papers and weekly/monthly magazines.