

EXTRA PROBLEM 9: EXPERT JUDGMENT

A manufacturer needs to make an assessment of the size of the potential market for a new product. A market analyst provides the following evaluations for the number of items, N , that can be sold in the first year (in thousands):

$$\Pr(N \leq 15) = 0.05$$

$$\Pr(N > 45) = 0.05$$

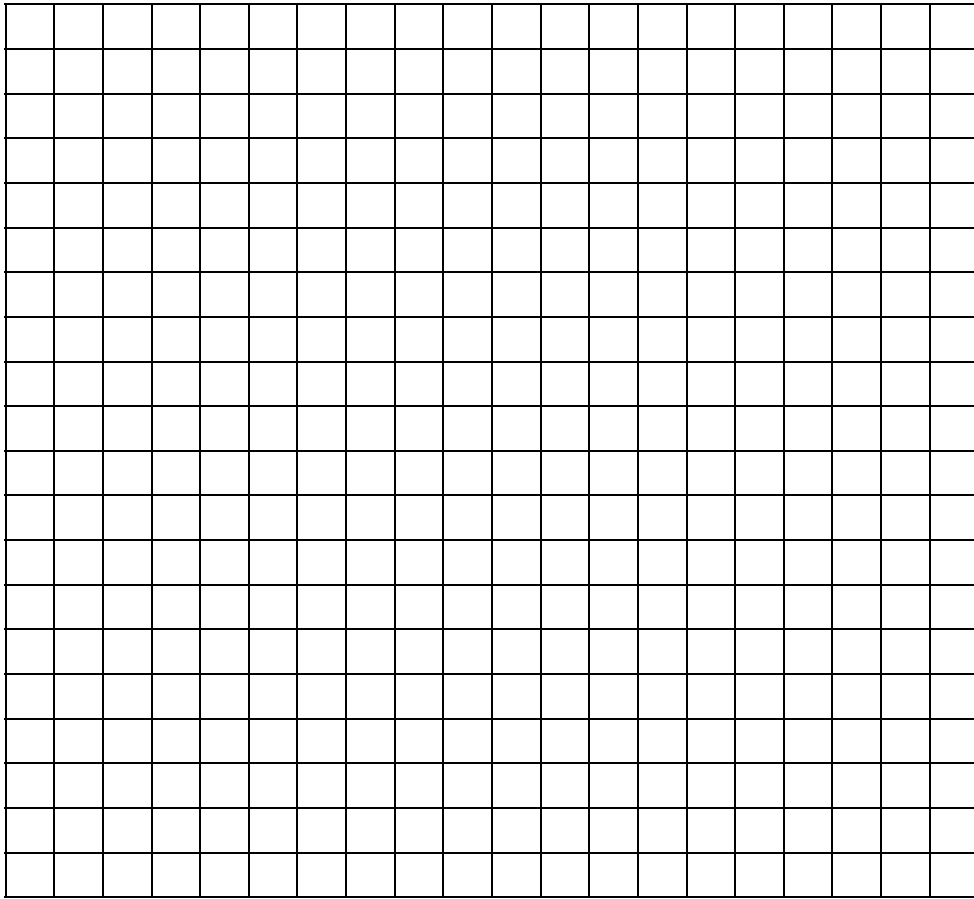
$$\Pr(N > 30) = 0.50$$

$$\Pr(N \leq 20) = 0.25$$

$$\Pr(N > 35) = 0.25$$

In addition, the market analyst provided the information that at least 5,000 will be sold, but definitely no more than 50,000.

A. Draw an approximate continuous cumulative distribution function (CDF) using the straight line approximation for N .



B. Construct a three-point approximation to this distribution with the extended Pearson-Tukey method. Estimate the expected demand with this approximation.

C. Construct a five-point approximation with bracket medians. Estimate the expected demand with this approximation.