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Appendix A.

Lehmann-Scheffé theorem of what distribution: Let X be a random vector having density $f(x;\theta)$.

Consider a model with a complete sufficient statistic T=G(X).

a. If h(T) is an unbiased estimator of $\tau(\theta)$, it is the best unbiased estimator of $\tau(\theta)$.

b. The best unbiased estimator is unique.

c. If there is any unbiased estimator of $\tau(\theta)$, there is a best unbiased estimator of $\tau(\theta)$.

Appendix B.

Random number generator based on the Poisson distribution:

Step 1 Let $a = e^{-10}$, $b = 1$, and $c = 0$.

Step 2 Generate $U_{c+1} \sim U(0,\ 1)$ and replace b by bU_{c+1}. If $b < a$ return $X = c$ otherwise go to **step 3**.

Step 3 Replace c by $c+1$ and go back to **step 2**.

Appendix C.

The Ford-Fulkerson Method for Solving Maximum Flow Problems

Given a feasible flow, how can we tell if it is an optimal flow? We determine which of the following properties is possessed by each arc in the network [14]:

Property 1 The flow through arc *e* is below the capacity of arc *e*. In this case, the flow through arc *e* can be increased. For this reason, we let S represents the set of arcs with this property.

Property 2 The flow in arc *e* is positive. In this case, the flow through arc *e* can be reduced. For this reason, we let R be the set of arcs with this property.

Now we can describe the Ford-Fulkerson labeling procedure used to modify a feasible flow in an effort to increase the flow from the source to the sink.

Step 1 Label the sources.

Step 2 Label nodes and arcs according to the following rules:

(1) If node j_1 is labeled, node j_2 is unlabeled and arc *e* is a member of S: label node j_2 and arc *e*. In this case, arc *e* is called a forward arc.

(2) If node j_1 is unlabeled, node j_2 is labeled and arc *e* is a member of R: label node j_1 and arc *e*. In this case, *e* is called a backward arc.

Step 3 Continue this labeling process until the sink has been labeled or until no more vertices can be labeled.

If the labeling process result in the sink being labeled, we can obtain a new feasible flow that has a larger flow from source to sink than the current feasible flow; and if the sink cannot be labeled, the current flow is optimal.