Lab 8: Spacing and distances

This session is concerned with summary statistics for spacings and interpoint distances.
The lecturer's R script is available here (right click and save).

Exercise 1

For the `swedishpines` data:

1. Calculate the estimate of the nearest neighbour distance distribution function G using `Gest`.
2. Plot the estimate of $G(r)$ against r.
3. Plot the estimate of $G(r)$ against the theoretical (Poisson) value $G_{\text{pois}}(r) = 1 - \exp(-\lambda\pi r^2)$.
4. Define Fisher's variance-stabilising transformation for c.d.f.'s by

   ```
   Phi <- function(x) asin(sqrt(x))
   ```

   Plot the G function using the formula `Phi(.) ~ Phi(theo)` and interpret it.

Exercise 2

For the `swedishpines` data:

1. Calculate the estimate of the nearest neighbour distance distribution function F using `Fest`.
2. Plot the estimate of $F(r)$ against r.
3. Plot the estimate of $F(r)$ against the theoretical (Poisson) value $F_{\text{pois}}(r) = 1 - \exp(-\lambda\pi r^2)$.
4. Define Fisher's variance-stabilising transformation for c.d.f.'s by

   ```
   Phi <- function(x) asin(sqrt(x))
   ```

   Plot the F function using the formula `Phi(.) ~ Phi(theo)` and interpret it.