

## Fuzzy Binomial Confidence Intervals

The following code in Rweb constructed a fuzzy binomial confidence interval for the case  $n = 25$  and  $x = 17$ . The command `print(1-phi)` produced the first figure and lets you see the actual values which gives the support and core. A somewhat clearer visualization of the edges of the fuzzy interval is given in the second picture and was produced by the last command.

```
> library(ump)
> n<-25
> x<-17
> alpha<-0.05
> phi <- umpu.binom(x, n, p, alpha)
> plot(p, 1 - phi, type = "l")
> fci.binom(x, n)
```

Note the first command adds a library which contains the R functions needed to compute the fuzzy intervals.

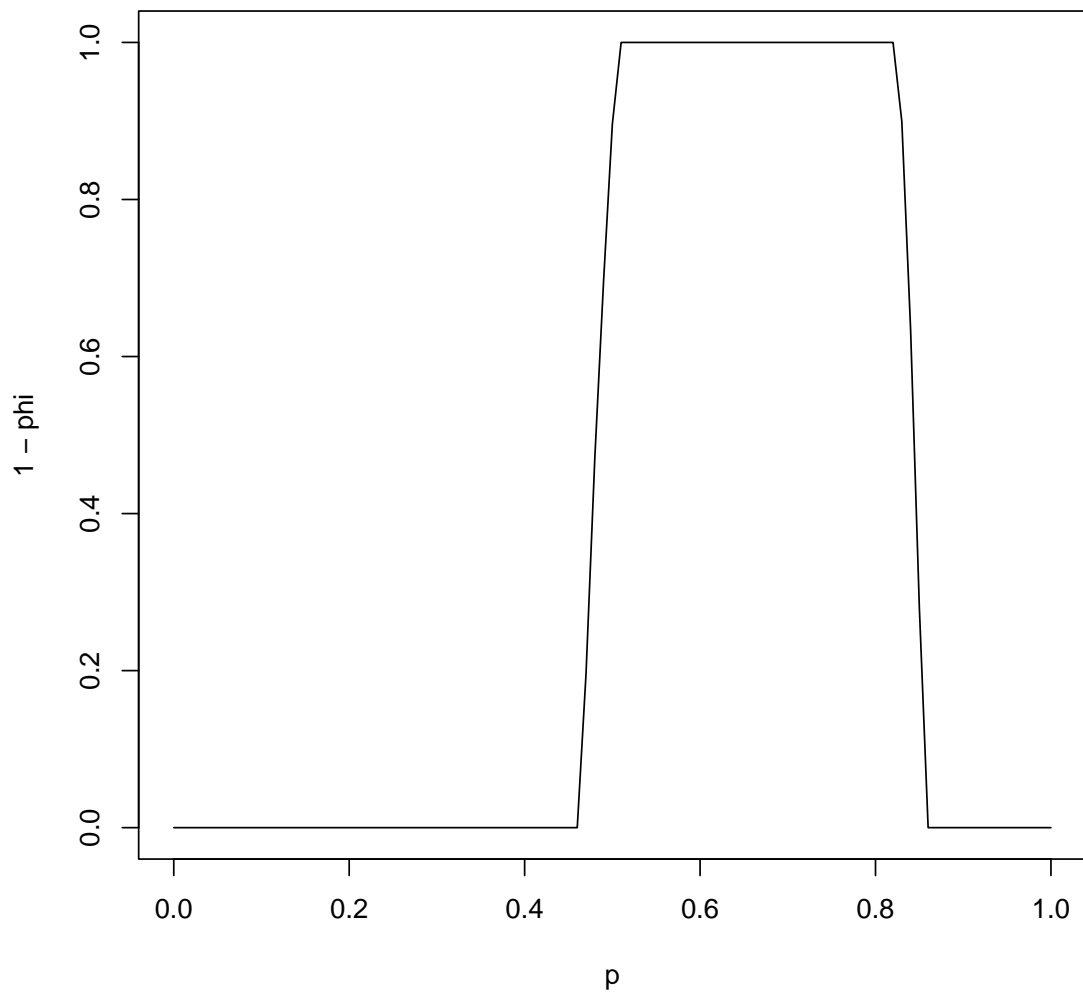


Figure 1: A 95% fuzzy confidence interval for  $n = 25$  and  $x = 17$ . The support of the interval is  $(0.48, 0.86)$  with core  $(0.52, 0.86)$ .

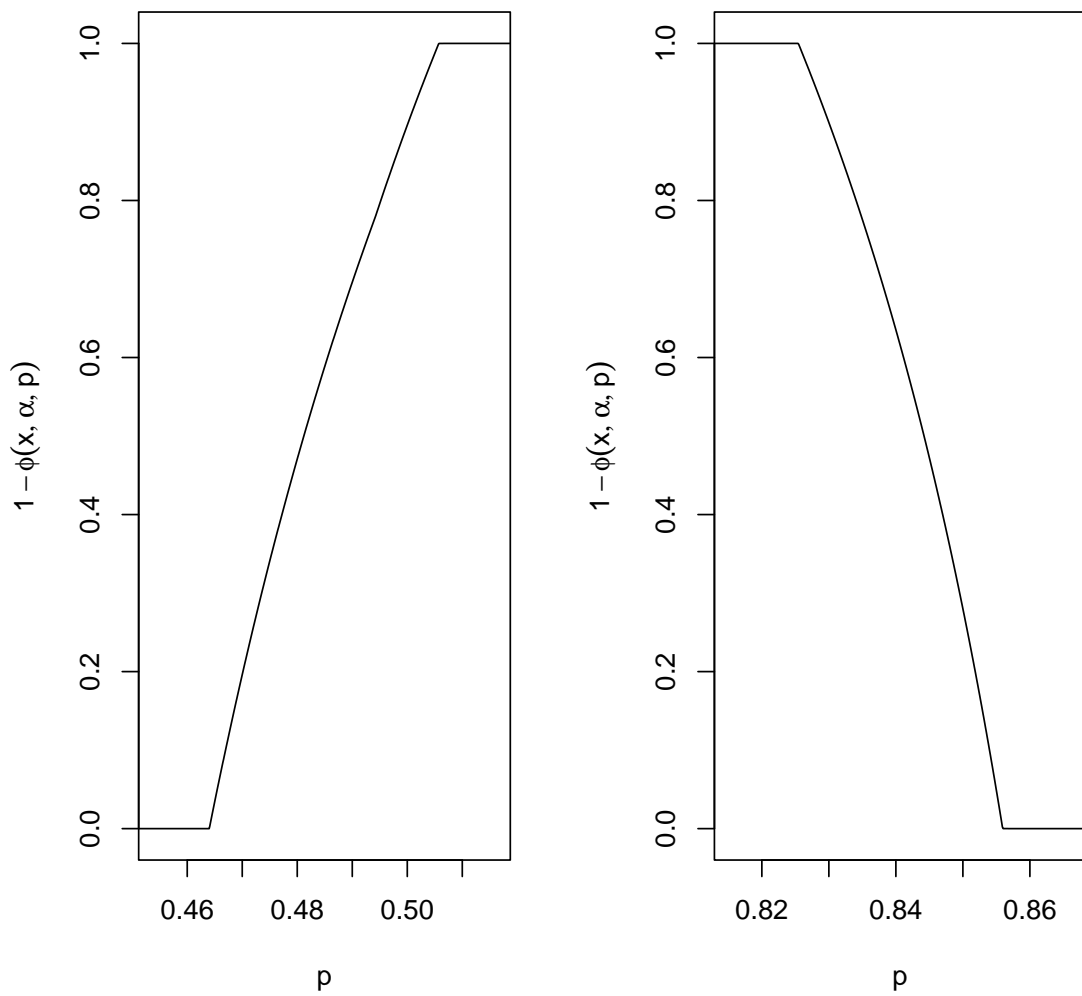


Figure 2: A second representation of a 95% fuzzy confidence interval for  $n = 25$  and  $x = 17$ .