AN ITERATIVE CONSTRUCTION OF CONFIDENCE INTERVALS FOR A PROPORTION

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Supplementary Materials

I. More details for Example 2

The tables for determining intervals for the rest of x-values are given below:
Step 3. For $C^P(1)$,

x	0	1	2	3	4	5	6	7	8
$L^P_{a,b}(x)$	0	a	0.0463	0.0463	0.0463	0.0463	0.4003	1-b	0.5997
$U^P_{a,b}(X)$	0.4003	b	0.5997	0.9537	0.9537	0.9537	0.9537	1-a	1

Step 4. For $C^P(3)$,

x	0	1	2	3	4	5	6	7	8
$L^P_{a,b}(x)$	0	0.0063	0.0463	a	a	1-b	0.4003	0.5000	0.5997
$U^P_{a,b}(X)$	0.4003	0.5000	0.5997	b	1-a	1-a	0.9537	0.9937	1

Step 5. For $C^P(4)$,

x	0	1	2	3	4	5	6	7	8
$L^P_{a,b}(x)$	0	0.0063	0.0463	0.1111	a	0.2892	0.4003	0.5000	0.5997
$U^P_{a,b}(X)$	0.4003	0.5000	0.5997	0.7108	1-a	0.8889	0.9537	0.9937	1

II. R-code

An R-code (CP-refining-sinica.r) is provided to compute the refined Clopper-Pearson interval $C^I(x)$ in Section 2.3 for $x = 0, ..., n$ at different confidence levels and sample sizes.