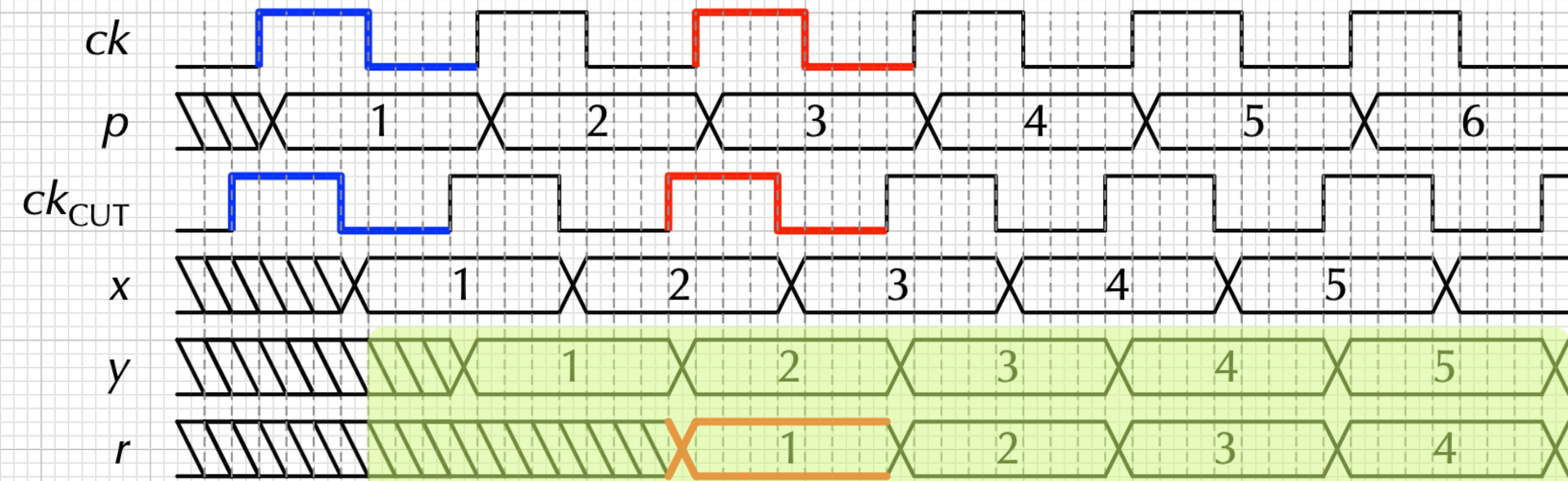


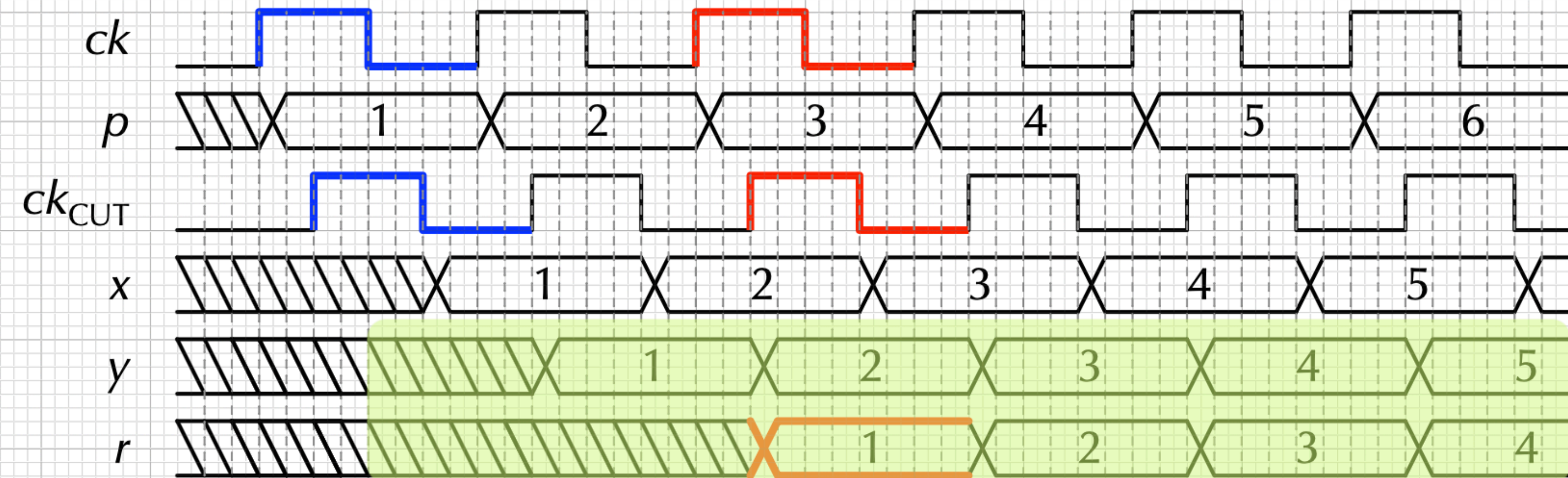
# HW 01 Retiming — reference solution

- Task I

$\tau < 0$



$\tau > 0$







## ● Task II

- Ignore the flip-flop D-to-Q delay and setup/hold-time requirements.

- Let  $T$  be the clock period.

- Without the re-timing circuit,  $-T \leq \tau \leq 0$ .

- With the re-timing circuit,  $-\frac{T}{2} \leq \tau \leq \frac{T}{2}$ .