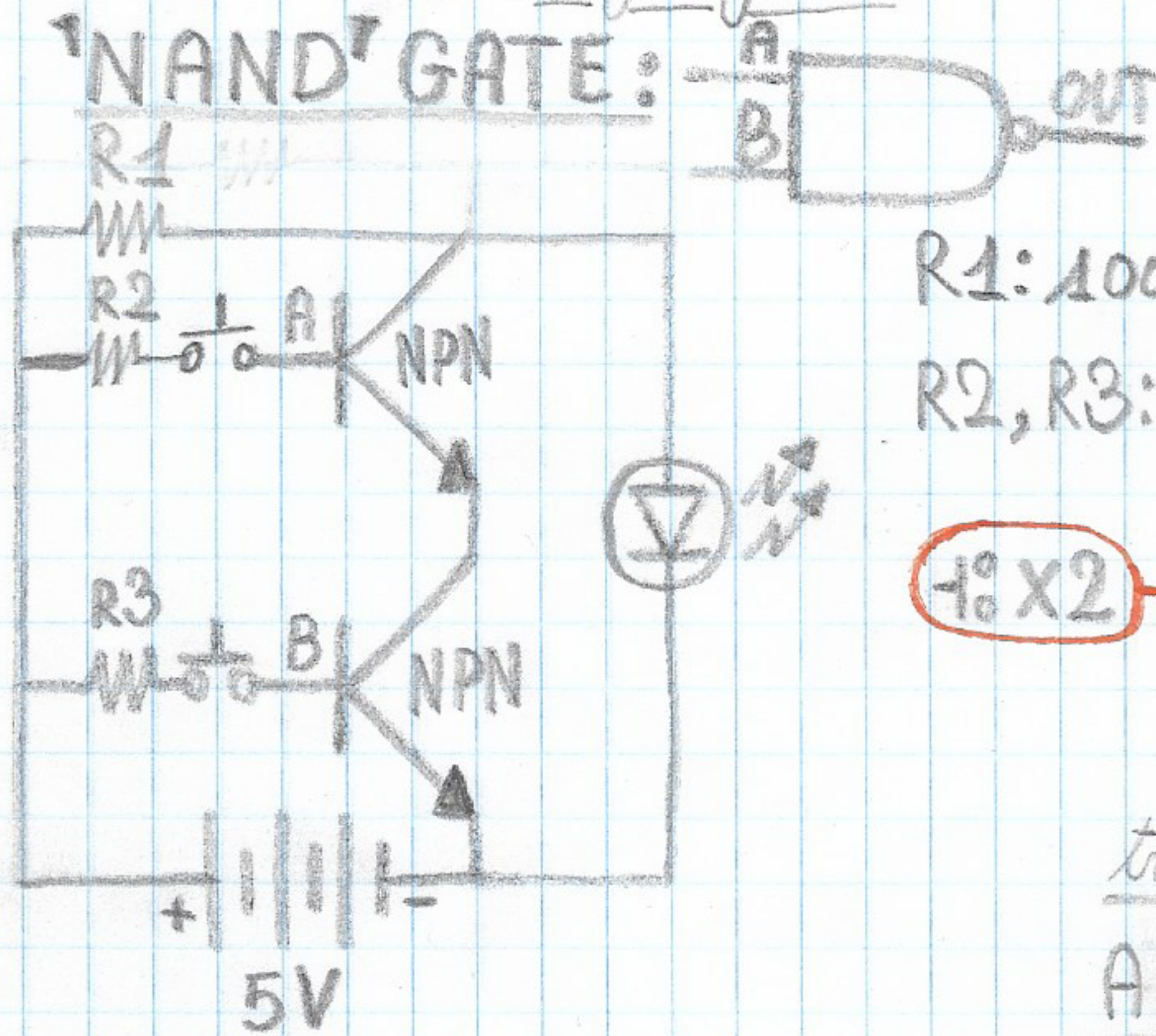


Logic gates:

'NAND' GATE:



R1: 100Ω used.

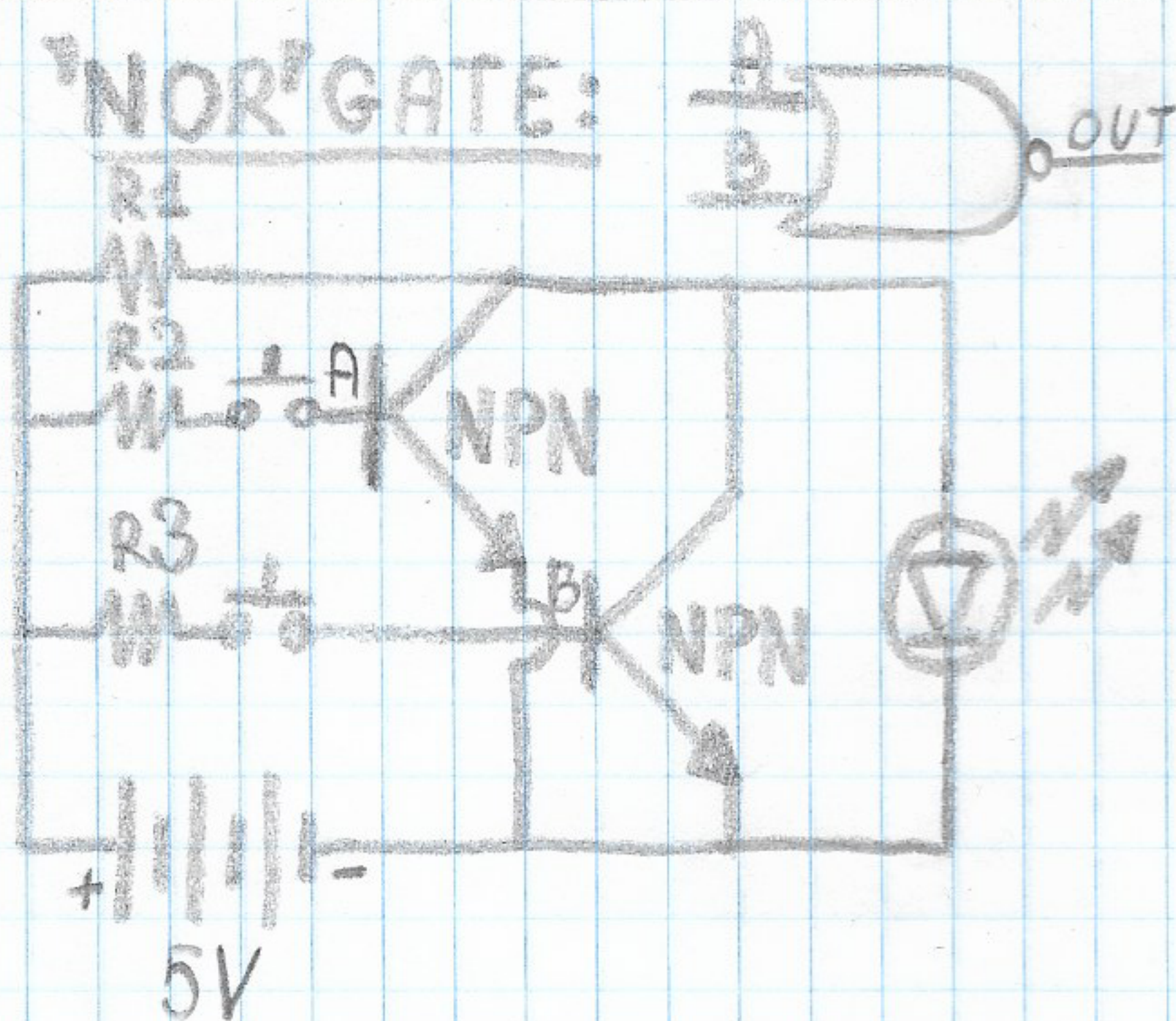
R2, R3: 1KΩ used.

$\neg \times 2$ - push both of the buttons to create a path of least resistance to omit the led.

truth table:

| A | B | out |
|---|---|-----|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

'NOR' GATE:



R1: 100Ω used.

R2, R3: 1KΩ used.

$\neg \parallel \neg$ - push neither of the buttons to create a path of least resistance to omit the led.

truth table:

| A | B | OUT |
|---|---|-----|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |