Task A.1

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$R1 = 10$
$R2 = 6$
$R3 = 7$
$R4 = 4$
$R5 = 5$
$R6 = 3$

$P = 0.080745 W$ (checked by hand as $80.745 mW$)

Task A.2

$P_{min} = 0.047619 W$, with combination $R = [3\ 7\ 4\ 6\ 5\ 10]$

Task A.3

$P_{min}^{SA} = 0.047619 W$, with combination $R = [5\ 7\ 4\ 6\ 3\ 10]$

This is indeed as above (3 and 5 switching is equivalent).

While nothing needed to be changed in this specific task, some minor changes had to be made for Task A.2. Notably changing resistor array, fixing a remaining $6! = 120$ bug and changing the order that R was being fed into the Dijkstra function by replacing line "R = find_next_perm(R)".

Task B.1

$P = 0.027064 W$ (attached)

Task B.2

(attached)