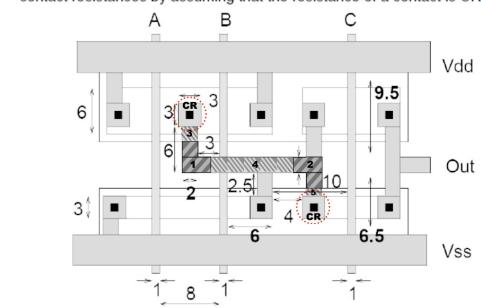
## ESE 555 | HOMEWORK 2

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## **QUESTION:**

Estimate the resistance from the output of the p-network of the NAND gate to the drain of the NMOS transistor in the next stage in the following layout. All dimensions are in microns and drawn to scale. Use primitive shapes and resistance values from the previous slides. Include the contact resistances by assuming that the resistance of a contact is CR.



## **SOLUTION:**

Shape & Number on Diagram	Calculation	Resistance (Ohm)
Non – Rectangular - 1	= W1/W2 = 2 / 2 = 1	2.50
Non – Rectangular - 2	= W1/W2 = 2 / 2 = 1	2.50
Rectangular - 3	= L/W = 2/2	1.00
Rectangular - 4	= L/W = 10.5 / 2	5.25
Rectangular - 5	= L/W = 2 / 0.5	4.00
Contact 1	= CR	CR
Contact 2	= CR	CR
	Total Resistance:	15.25 + 2CR