Part A, #1

$V_i = 5V$; $V_o = -\frac{R_5}{R_x} V_i$

@R1 (bit through 1kΩ) $R_x = R_1 = 1k\Omega$

$V_o = -\frac{500}{1000}(5) = -2.5\,V$

@R2 (bit through $R_2 = 2k\Omega$)

$V_o = -\frac{500}{2000}(5) = -1.25\,V$

@R3 (bit through $R_3 = 4k\Omega$)

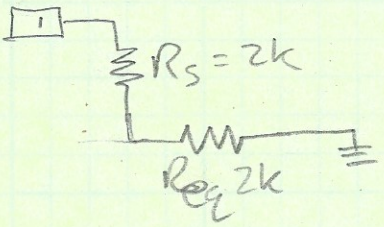
$V_o = -\frac{500}{4000}(5) = -0.625\,V$

@R4 (bit through $R_4 = 8k\Omega$)

$V_o = -\frac{500}{8000}(5) = -0.3125\,V$

Part B, #1

@Bit through R5 (1000) => Thevanin can collapse down to



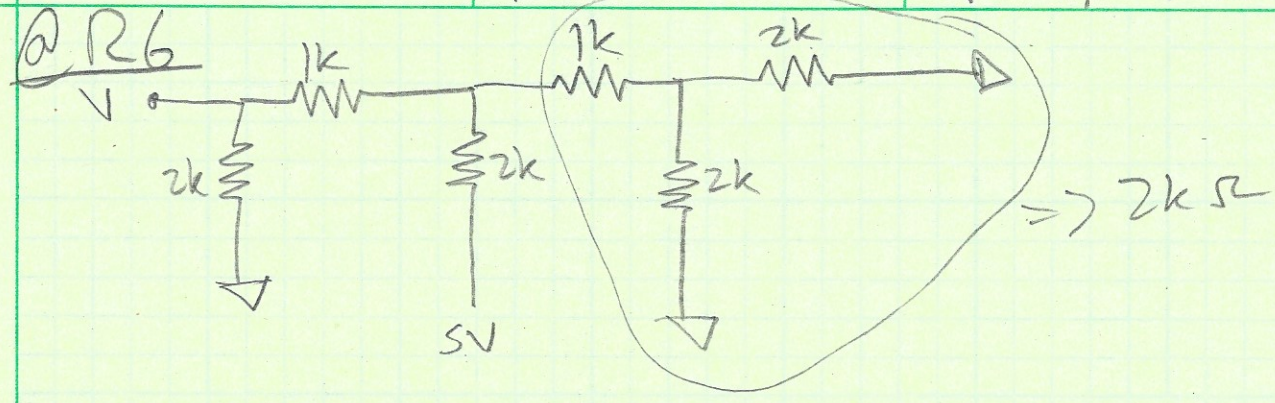
Do voltage div,

$V_o = \frac{2k}{2k+2k} V_{in}$

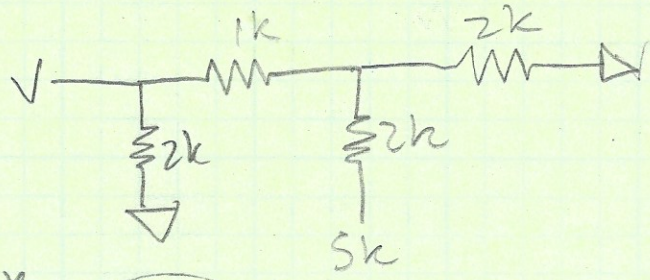
$= \frac{1}{2}(5)$

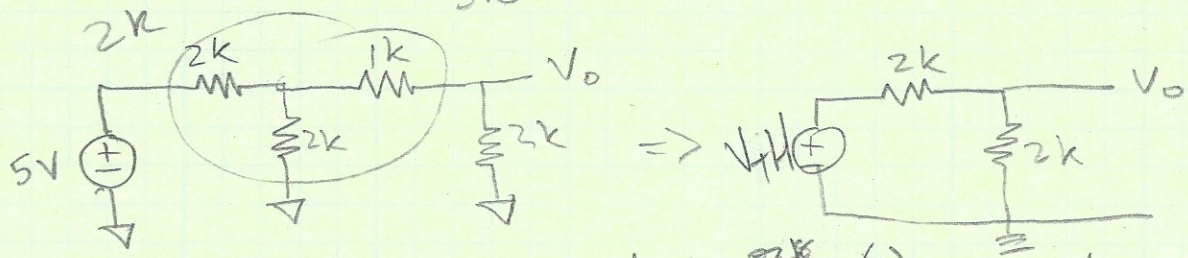
$V_o = 2.5\,V$

@R6



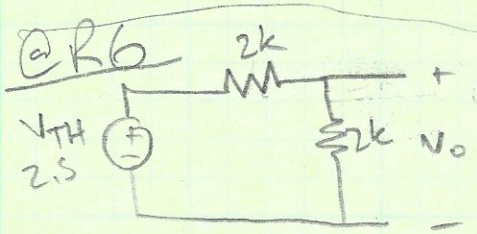
=> 2k Ω





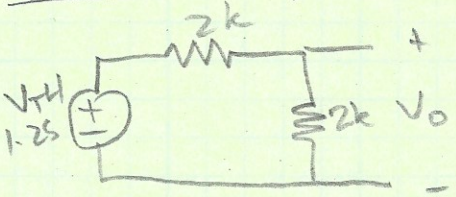
$V_{TH} = \frac{2k}{2k+2k}(5) = 2.5\ V$

@R6



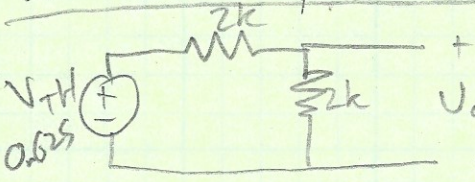
$$V_o = \frac{2k}{2k+2k}(2.5) = 1.25\ V$$

You can repeat this @ R_7



$$V_o = \frac{2k}{2k+2k}(1.25) = 0.625\ V$$

You can repeat this @ R_8



$$V_o = \frac{2k}{2k+2k}(0.625) = 0.3125\ V$$