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Lab 9

1. Input voltage $V_{in\,pp}$ = 21.33 mV
Output voltage $V_{out\,pp}$ = 218.3 mV

Observed gain = $\frac{218.3}{21.33} \simeq 10$ (Theoretical gain)

2. Input voltage = 22.11 mV_{pp}
Output voltage = 23.3 mV_{pp}
Observed gain = $\frac{23.3}{22.11} = 1.05$

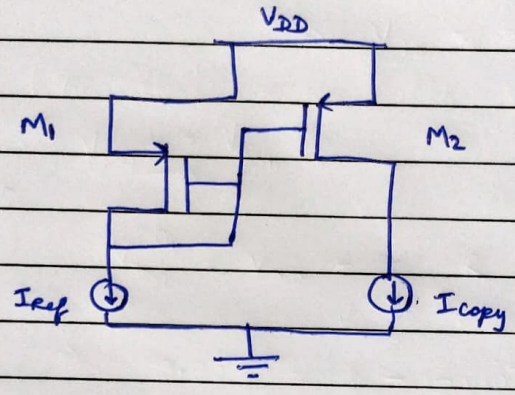
Input voltage = 2.23 V_{bias}
Output voltage = 2.422 V_{dc}
Observed gain = $\frac{2.422}{2.23} = 1.086$

3.

V_{DS_2}	V_{DS_1}	I_{ref}	I_{copy}
0V	3.98V	2mA	0mA
0.5V	3.48V	2mA	1.13mA
1V	3.98V	2mA	1.75mA
1.5V	3.48V	2mA	1.93mA
2V	3.48V	2mA	1.98 mA
2.5V	3.48V	2mA	2mA
3V	3.48V	2mA	2.02 mA
3.5V	3.48V	2mA	2.03 mA
3.93V	3.48V	2mA	2.04 mA
4.43V	3.48V	2mA	2.05 mA
4.92V	3.48V	2mA	2.06 mA
5.41V	3.48V	2mA	2.06mA
5.9V	3.48V	2mA	2.07mA

V_{DS2}	V_{DS1}	I_{ref}	I_{copy}
6.4V	3.48V	2mA	2.07 mA
6.89V	3.48V	2mA	2.07 mA
7.38V	3.48V	2mA	2.08 mA
7.88V	3.57V	2mA	2.08 mA

PMOS Current Mirror



Naman
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