Difference Amp:

* use Super position

$$CMRR = 20 \log \left| \frac{Ad}{ACM} \right|$$

→ If ACM is zero, (ideal) → $CMRR = \infty$

want $A_{CM} = 0$

$R_4 = R_2$, $R_1 = R_3$ } zero common mode gain

A_d

$$A_d = R_2/R_1$$

$v_O = A_{cm} v_{Icm} + A_d v_{ID} \rightarrow v_O = A_d v_{ID}$

(A_{cm} ideally 0)

$$v_O = \frac{R_2}{R_1} v_{ID}$$

*issue! $R_4 = R_2$ & $R_3 = R_1$, rather restrictive.

much larger than R_1

large

Example: