

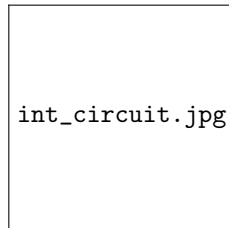
MOS-Based Differential Circuits Report

梁程捷(B11901136), 吴奕娃(B11901080)

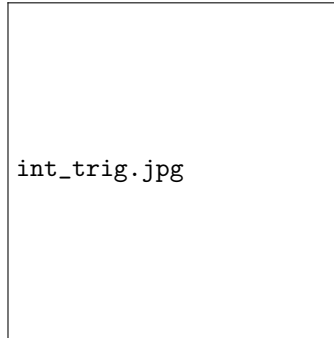
1 DC Analysis

$$I_1 = 0.129 \text{ mA}, I_2 = 0.156 \text{ mA}, I = 0.280 \text{ mA}$$

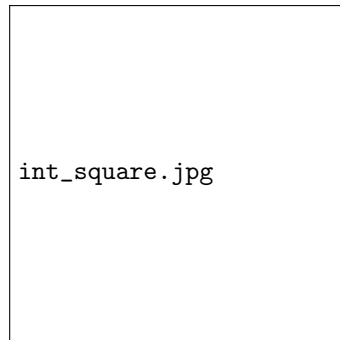
$I_1 \neq I_2$ due to mismatch in circuit components and transistor parameters.
 $I_1 + I_2 = I$ because of *Kirchhoff's Current Law*.



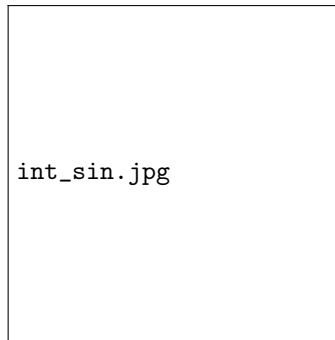
(a) Integrator circuit



(b) Triangle wave input

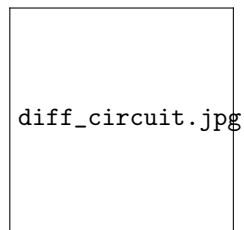


(c) Square wave input

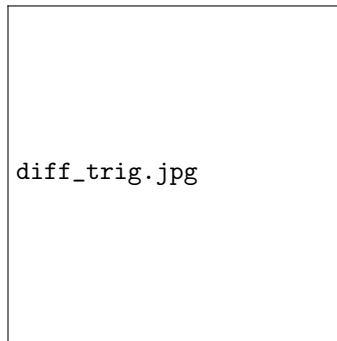


(d) Sinusoidal wave input

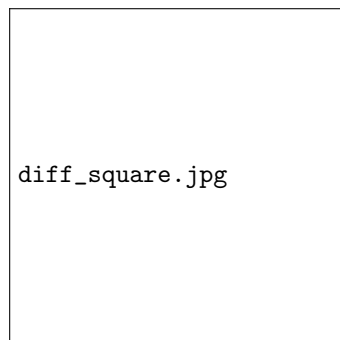
2 Differentiator



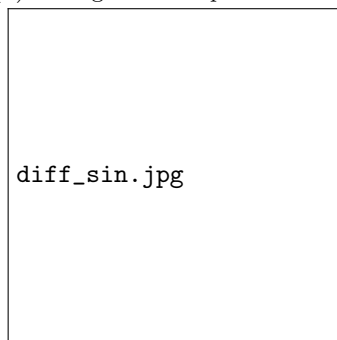
(a) Differentiator circuit



(b) Triangle wave input



(c) Square wave input



(d) Sinusoidal wave input