5) a)

1) Total noise = $1.862e^{-16}$ Crms

98.9% of total noise = $1.8247e^{-16}$ $\overline{c^2}$ occurs at 773 MHz

2) sw_noise = 0

Total noise = $1.813e^{-16}$ Crms

Drop of 2.6% compared to baseline

3) to_phase = 2 sw_noise = 1 node /Vo

Total noise 118.7 μVRMS

4) Total output noise = $\sqrt{\frac{\overline{q_o^2}}{Cf^2} + \overline{Vo_2^2}} = \sqrt{\left(\frac{1.862e^{-16}}{1pF}\right)^2 + (118.7e^{-6}V)^2}$

= 220.8 μV_{rms}

This is 42% higher than the noise calculated in step f of problem 4

b) 1) flicker_on = 0 cds_en = 1

Total integrated noise 214.1 μVRMS

2) flicker_on = 1 cds_en = 1

Total integrated noise 216.2 μVRMS

No flicker noise evident in plot

3) flicker_on = 1 cds_en = 0

Total integrated noise 157.2 μVRMS

flicker noise very evident in PSD

4) flicker_on = 0 cds_on = 0

Total integrated noise 156 μVRMS