

### Special Problem 4.B-7

A radio engineer is designing a receiver for an RF band from **500 MHz** to **600 MHz**.

This engineer is considering three designs, each using **low-side** tuning:

Design **A** uses an IF of **470 MHz**.

Design **B** uses an IF of **275 MHz**.

Design **C** uses an IF of **200 MHz**.

- a) Determine the frequency range of the **local oscillator** required for each design.
- b) Consider now these three designs. **Two** of them have serious flaws, concerning their LO frequencies and bandwidths. Identify these two flaws, and **state** what the problems are for each.