6. Consider the circuit below. Beyond 10V, what will $V_{C1}$ and $V_{C2}$ be? Run an ntspice simulation to confirm your answer.

![Circuit Diagram]

The equivalent capacitance of the series connected capacitors $C_1 + C_2$ is \[ \frac{1}{\frac{1}{C_1} + \frac{1}{C_2}} (\mu F) = 0.909 \, \mu F \]

Total charge of the pair is then given by:

\[ Q = CV \] so \[ Q = (0.909 \times 10^{-6}) (10) = 9.09 \times 10^{-6} \, \text{C} \]

The voltage on the individual capacitors is then:

\[ V_1 = \frac{Q}{C_1} = \frac{9.09 \times 10^{-6}}{1 \times 10^{-6}} = 9.09 \, V \] and

\[ V_{C2} = \frac{Q}{C_2} = \frac{9.09 \times 10^{-6} \times 10}{10 \times 10^{-6}} = 9.09 \, V \]

A sanity check comes in that $V_1 + V_{C2} = 10 \, V$