Calculate the output voltages for the following circuits:

1. 
   \[ V_{\text{out}} = \ldots \]

2. 
   \[ V_{\text{out}} = \ldots \]

3. 
   \[ V_{\text{out}} = \ldots \]

4. 
   \[ V_{\text{out}} = \ldots \]
Use the above circuits to construct an analog computer, where the voltage at point \( x \) satisfies the following equation:

\[
\frac{d^2 v(x)}{dt^2} = 5 \frac{dv(x)}{dt} + v(x)
\]

Hint: Start at a point where you define the voltage to be \( \frac{d^2 v(x)}{dt^2} \). Then use the circuits above to generate the right hand side of the equation (let \( RC = 1 \)). Connect this resultant point back to your starting point to force the differential equation to be true. Mark the point in the circuit where \( v(x) \) exists (this is not your starting point — that was \( \dot{v}(x) \)).

\cite{Note}(It is standard practice to start with the highest derivative present in the equation. This avoids the use of differentiator circuits, which have the practical problem of high gain for high frequency noise. Integrators are mostly well-behaved.)