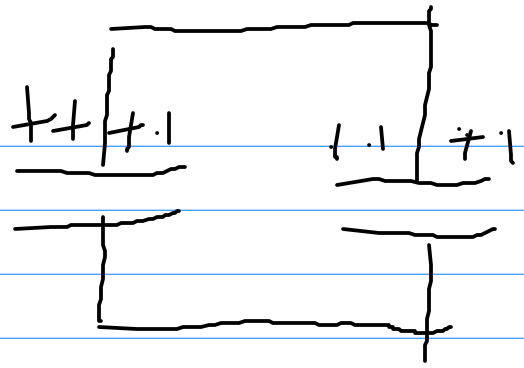
8/11



$C_1 = 1\,nF$

$V_{C_1} = 10\,V$

$C_2 = 2\,nF$

$V_{C_2} = 20\,V$

$Q_t = Q_1 + Q_2$

$C_t = C_1 + C_2$

$$V_F = \frac{Q_t}{C_t} = \frac{C_1 V_1 + C_2 V_2}{C_1 + C_2}$$

$E_1 = 50\,10^{-8}\ J$

$E_2 = 4{,}0\,10^{-7}\ J$

$\Rightarrow E_f = 417\,nJ$

$50\,nJ$

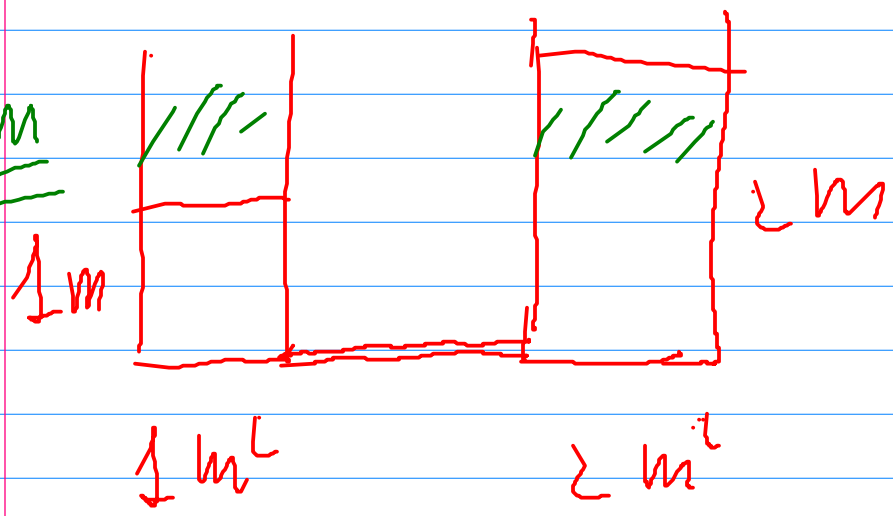
$400\,nJ$

$450\,nJ$

$-33\,nJ$

$-7{,}4\,\%$

10 m



20 m

$$S_t = S_1 + S_2 \qquad V_t = V_1 + V_2$$

$$h_g = \frac{V_t}{S_t} = \frac{S_1 \cdot h_1 + S_2 \cdot h_2}{S_1 + S_2}$$

$$E_1 = m_1 g h_1/2 = \frac{1}{2} \rho g S_1 \cdot h_1 h_1$$

$$= \frac{1}{2} \rho g S_1 h_1^2 \leftrightarrow \frac{1}{2} \rho v^2$$