a) Si M_1 es reversible $\longrightarrow \Delta S_{M_1} = 0 \longrightarrow \frac{|Q_1|}{T_1} - \frac{|Q_2|}{T_2} - \frac{|Q_3|}{T_3} = 0$

$\longrightarrow \frac{|Q_2|}{T_2} = \frac{|Q_1|}{T_1} - \frac{|Q_3|}{T_3} = \frac{1}{4} \longrightarrow T_2 = 4|Q_2| \longrightarrow \boxed{T_2 = 400k}$

b) $\Delta U_{M_1} = 0 = Q_1 - |Q_2| - |Q_3| - |W| \leftrightarrow |W| = Q_1 - |Q_2| - |Q_3|$

Entonces, $\boxed{|W| = 75\,CAL}$

$\epsilon = \frac{W}{Q_1} \longrightarrow \boxed{\epsilon = 0{,}25}$

c) $\Delta U_{M_2} = 0 = |Q_2'| - |Q_1'| - (-|W|) \rightarrow |Q_2'| = |Q_1'| - |W|$

Entonces, $\boxed{|Q_2'| = 75\,CAL}$

d) $\eta = \frac{|Q_2'|}{|W|} \rightarrow \boxed{\eta = 1}$

e) Tengo que ver si M_2 es reversible

$\Delta S_2 = \frac{|Q_2'|}{T_2} - \frac{|Q_1'|}{T_1} = -0{,}3125 \neq 0$

$\rightarrow$ el sistema no es reversible