1 Overlapping Generations with Government Budget Restrictions:

2-period lives.
1 commodity per period, $t = 1$.
Stationary endowments:

\[
\begin{align*}
\omega_0^1 &= 1 > 0 \text{ for } t = 0 \\
(\omega_t^t, \omega_{t+1}^t) &= (1, 1) > 0 \text{ for } t = 1, 2, ...
\end{align*}
\]

Stationary preferences:

\[
\begin{align*}
u_0(x_0^1) &= 2 \ln x_0^1 \text{ for } t = 0 \\
u_t(x_t^t, x_{t+1}^{t+1}) &= \ln x_t^t + 2 \ln x_{t+1}^{t+1} \text{ for } t = 1, 2, ...
\end{align*}
\]

Passive fiscal policy:

\[
m_0^1 = 7 \quad m_t^t = 0 \text{ otherwise}
\]

Goods price of money is $p^m \geq 0$.

(a) What is the deficit in period $t$, $t = 1, 2, ...$?

(b) Find the monetary steady-state allocation $x = (x_0^1, x_1^1, x_2^1, ..., x_t^t, x_{t+1}^{t+1}, ...)$ and the associated goods price of money $p^m$.

(c) Can this allocation be achieved as an equilibrium with an active fiscal policy (in which the $m_t^t$'s are not necessarily zero) that meets the constitutional restriction that the government budget deficit be zero. What is this restriction in terms of the $m_t^t$'s? If you can, solve for the $m_t^t$'s.