HW #5 Key

1.) a.) $r_t = p + \phi \pi_{t+1}^e - \phi \pi_{t+1}^e$

$\hat{r}_t = \boxed{0} + \phi p_{t+1}^e - \phi p_t - p_{t+1}^e + \phi p_t$

$p_t = p_{t+1}^e + \dfrac{\hat{r}_t}{1-\phi}$

Iterating: $p_t = p_{t+g}^e + \dfrac{\hat{r}_t}{1-\phi} + \dfrac{\hat{r}_{t+1}^e}{(1-\phi)^2} \cdots + \dfrac{\hat{r}_{t+g}^e}{(1-\phi)^g}$

as $g \to \infty$, the model does not converge to a unique solution. It is indeterminate for all values of ϕ.

b.) The Central Bank should not utilize a policy rule that depends only on expected inflation.

2 a.) $r_t = p + \phi y_t$

$r_t = p + \phi y_t - \pi_{t+1}$

$\hat{r}_t = r_t - p - \phi y_t \to$ exogenous to monetary policy

$p_t = p_{t+1}^e - \hat{r}_t = p_{t+1} - \hat{r}_t + \delta_{t+1} \to$ always indeterminate

b.) Once again, the Central Bank should not use this rule.