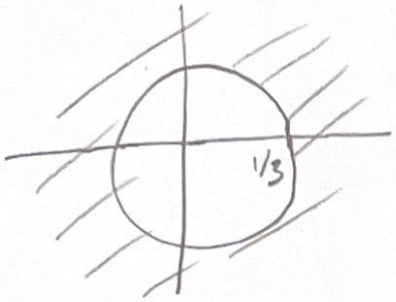
34) $H(z) = \frac{1}{(1+1/4z^{-1})(1+1/3z^{-1})}$

A) Poles : $z = -1/4, -1/3$



Stable since ROC includes unit circle

ROC : $|z| > |1/3|$

B) $\frac{1}{(1+\frac{1}{4}z^{-1})(1+1/3z^{-1})} = \frac{A}{1+\frac{1}{4}z^{-1}} + \frac{B}{1+1/3z^{-1}}$

$\left.\frac{1}{1+1/3z^{-1}}\right|_{z=-1/4} = A$

$A = \frac{1}{1+\frac{1}{3}(-4)} = \frac{1}{-1/3} = -3$

$\left.\frac{1}{1+1/4z^{-1}}\right|_{z=-1/3} = B$

$B = \frac{1}{1+\frac{1}{4}(-3)} = \frac{1}{1/4} = 4$