Ok to post

1. $x=0$ is always a fixed point because 0 divided by any constant is always 0.
   $X = x/(x+c)$
   $x^2 + cx = x$
   $x^2 + (c-1)x = 0$
   $x(x + (c-1)) = 0$
   $X = 0, -(c-1)$
   For the other fixed point to be stable c must be $-2<c<-1$ or 1 for $x = 0$

2. i. $\begin{bmatrix} -\frac{16}{3} & 5 \\ -7 & \frac{13}{2} \end{bmatrix}$ $\frac{1}{3} < 1$ stable

$-\frac{1}{2} < 1$

ii $\begin{bmatrix} \frac{92}{3} & -25 \\ 35 & -\frac{57}{2} \end{bmatrix}$ $\frac{17}{3} > 1$ not stable

iii. $\begin{bmatrix} -\frac{177}{4} & \frac{75}{2} \\ -\frac{105}{2} & \frac{89}{2} \end{bmatrix}$ $-\frac{27}{4} < 1$ stable.

$-8 < 1$

Scanned with CamScanner