2(c). At steady state

$\frac{dx}{dt} = 0$ $\frac{dz}{dt} = 0$

$$X = \frac{\alpha_X + \beta_X S}{1 + S + (Z/z_X)^{n_{ZX}}}, \qquad \delta_Z Z = \frac{1}{1 + (X/X_Z)^{n_{XZ}}}$$

$\alpha_X = 1.5$, $\beta_X = 5.0$. $Z_X = 0.4$ $n_{ZX} = 2.7$ $X_Z = 1.5$ $n_{XZ} = 2.7$ $\delta_X = 1.0$.

$$Z = \frac{1}{1 + (X/1.5)^{2.7}} \qquad X = \frac{1.5 + 5S}{1 + S + \left[2.5/(1 + (X/1.5)^{2.7})\right]^{2.7}}$$

Use excel solve to solve S and plot the X vs. S graph.

The black line in the paper is reproducible in excel.