Ok to post

1. Running with values of k less than 3 gives the only stable fixed point is (0, k).
2. Running Orb(k*x*(1 - x), x, 0.5, 1000, 1002) starting at k = 3.1 shows the second bifurcation point is about k = 3.45.
3. Running SFPe(x^(-b)*x, x) gives the fixed points of (0, 0) and (1, -b+1). It is stable when b>2.
4. i. Running Orbk(2, x, (x[1] + a*x[2])/(b*x[1] + x[2]), [1.1, 5.3], 1000, 1010) with all combinations of a and b yields the following results:

| a<br>b | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | 1 | 1.5 | 2 | 2.5 |
| 2 | 0.666 | 1 | 1.333 | 1.666 |
| 3 | 0.5 | 0.75 | 1.056, 0.947 | 2.366, 0.634 |
| 4 | 0.4 | 0.6 | 1.577, 0.423 | 2.618, 0.382 |

4. ii $x = \dfrac{x + ax}{bx + x}$

$x = \dfrac{x(1+a)}{x(b+1)}$

$x^2(b+1) = x(1+a)$

$\dfrac{x^2}{x} = \dfrac{1+a}{b+1}$

$x = \dfrac{1+a}{b+1}$ $x$ cannot be $0$