

The water temperature will remain constant at $T=22.2$

The Jacobian for the critical point (0,0) is:

J_1 =

$-1205/7344$	0
0	$-43/2667$

The eigenvalues of the Jacobian above are:

$-1205/7344$
 $-43/2667$

The Jacobian for the critical point (0,6) is:

J_2 =

$-733/1814$	0
$3/6250$	$43/2667$

The eigenvalues of the Jacobian above are:

$43/2667$
 $-733/1814$

The Jacobian for the critical point (15,0) is:

J_3 =

$1205/7344$	$-3/5$
0	$-94/6299$

The eigenvalues of the Jacobian above are:

$1205/7344$
 $-94/6299$

The Jacobian for the critical point (33.313837,5.008209) is:

J_4 =

$2791/7659$	$-569/427$
$10/24959$	$85/6316$

The eigenvalues of the Jacobian above are:

$1003/2764$
 $37/2469$

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