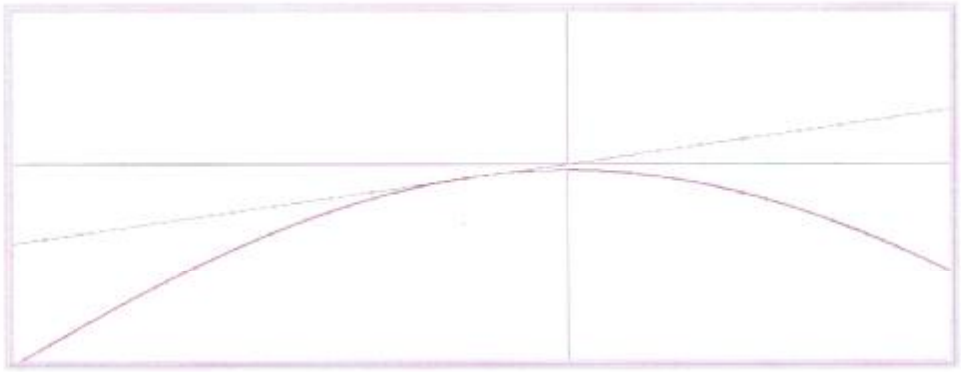
$Q_c^3(x)$ Bifurcations

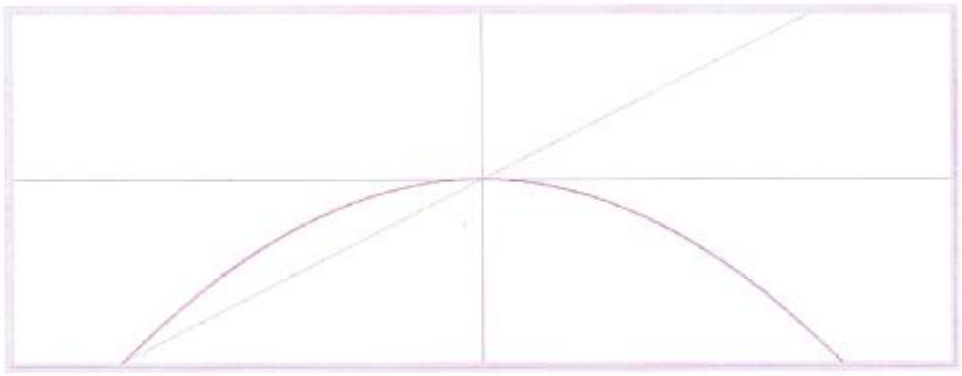
Let $Q_c(x) = x^2 + c$. Use phaser to answer these questions. Turn in at least one graph for each problem and find the c's to 4 significant figures. All the c values should be between –1.7 and –1.9.

1. Find the c where a 3-cycle for $Q_c(x)$ begins. Look at $Q_c^3(x)$ on phaser. $-1,75$
2. Find the c where $Q_c^3(x)$ has a critical point that is fixed. $-1,75488$
3. Find the c where $Q_c^3(x)$ has a period doubling bifurcation. $-1,76853$
4. Find the c where $Q_c^3(x)$ has a critical point which is eventually fixed. -1.79032275

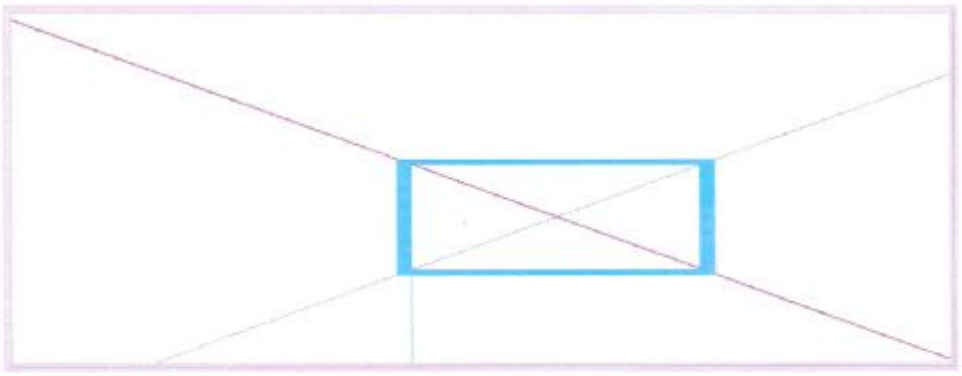


Tangent bifurcation for Q_c^3 at

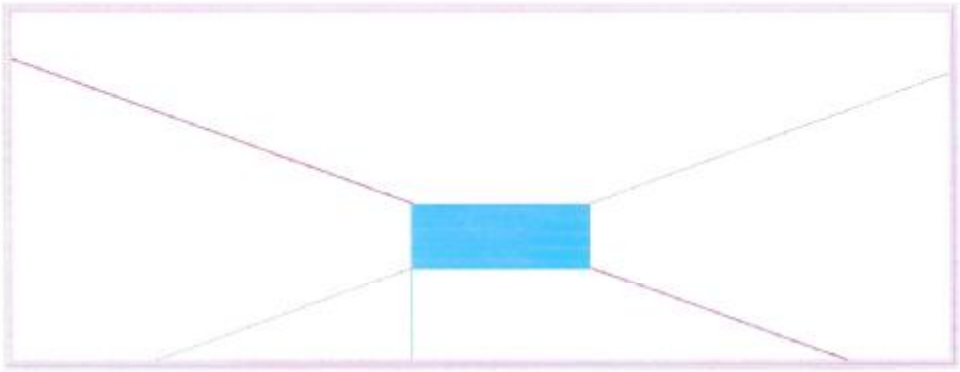
$c = -1,75$



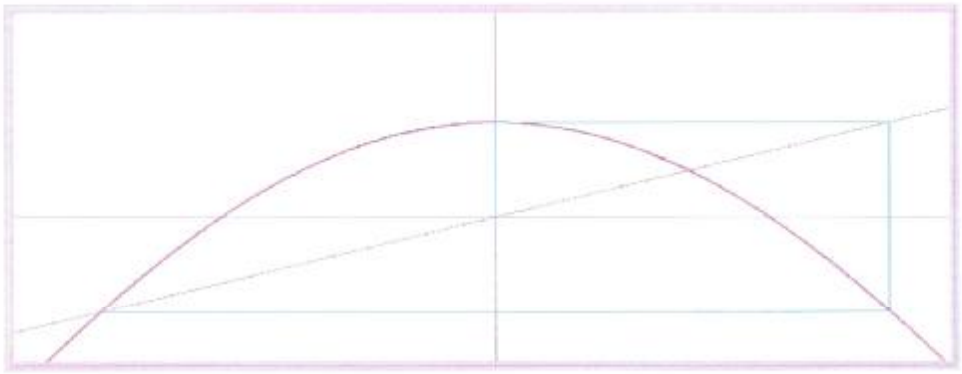
The origin is a critical point and is fixed when $c = -1.75488$



$c = -1.76853$ a point of period 2 has been produced.



$c = -1.76852$ the fixed point is still attracting



$C = -1.7903275$

The critical point is eventually fixed.