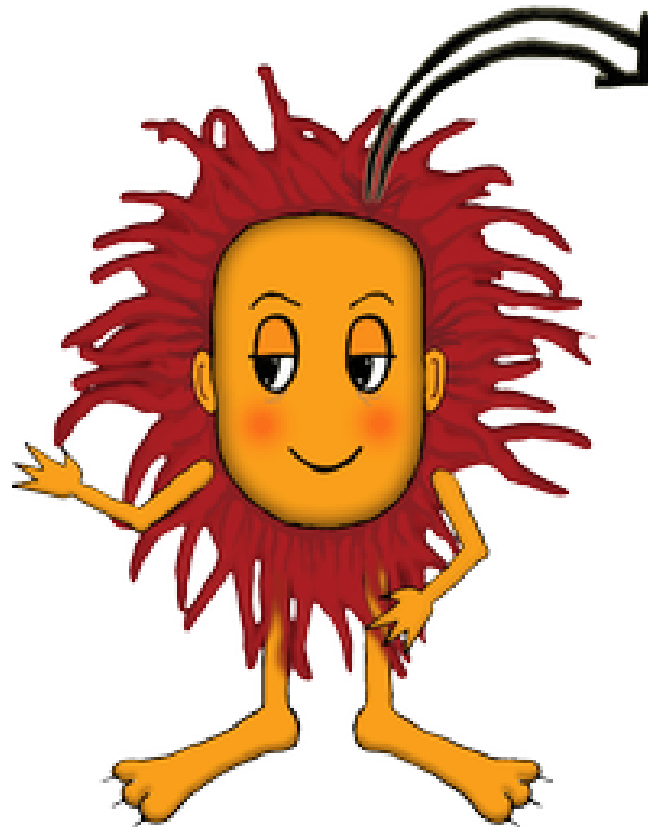


Velika logična pošast



Ničle kvadratne funkcije

Dana je kvadratna funkcija kompleksne spremenljivke

$$w=f(z)=z^2+pz+q,$$

kjer sta p in q realni števili.

Kompleksna ravnina je pobarvana, tako da je pri $\text{Re}[w] \geq 0$ in $\text{Im}[w] \geq 0$ rdeča barva

pri $\text{Re}[w] \geq 0$ in $\text{Im}[w] < 0$ rumena barva,

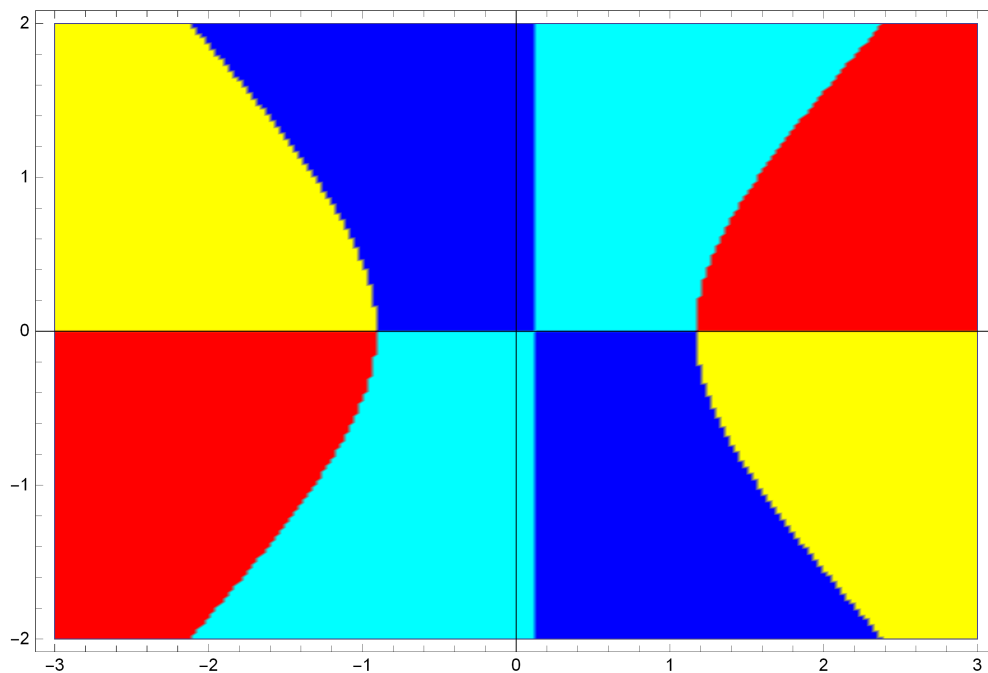
pri $\text{Re}[w] \leq 0$ in $\text{Im}[w] \geq 0$ cijanidna barva in

pri $\text{Re}[w] \leq 0$ in $\text{Im}[w] < 0$ modra barva,

Oceni kvadratni koren na eno do dve decimalki natančno.

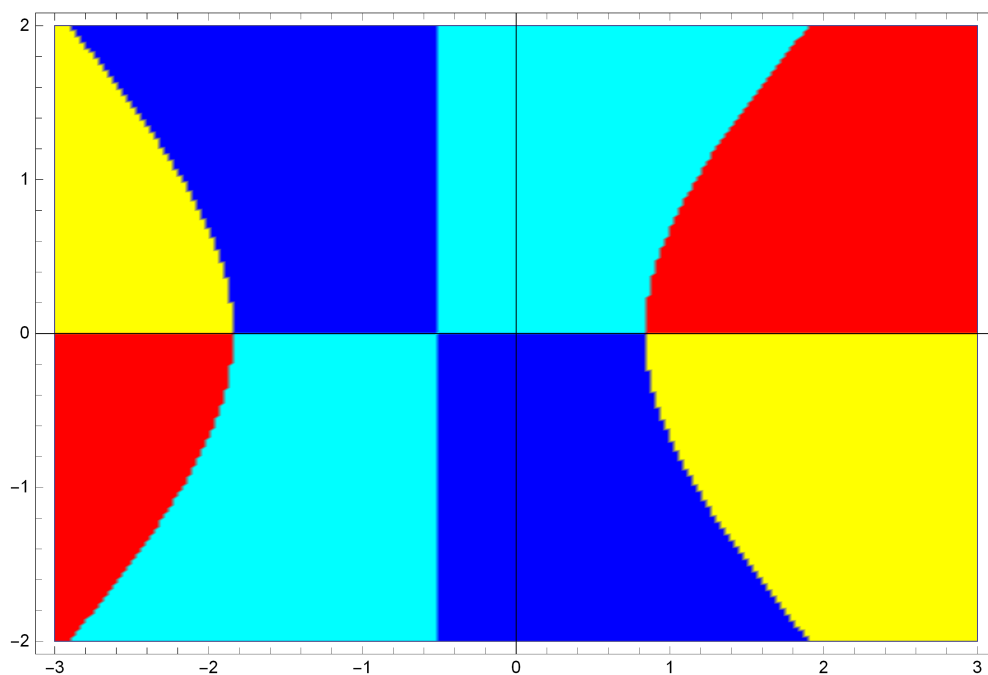
1.

$$w(z) = z^2 - 0.26z - 1.06$$



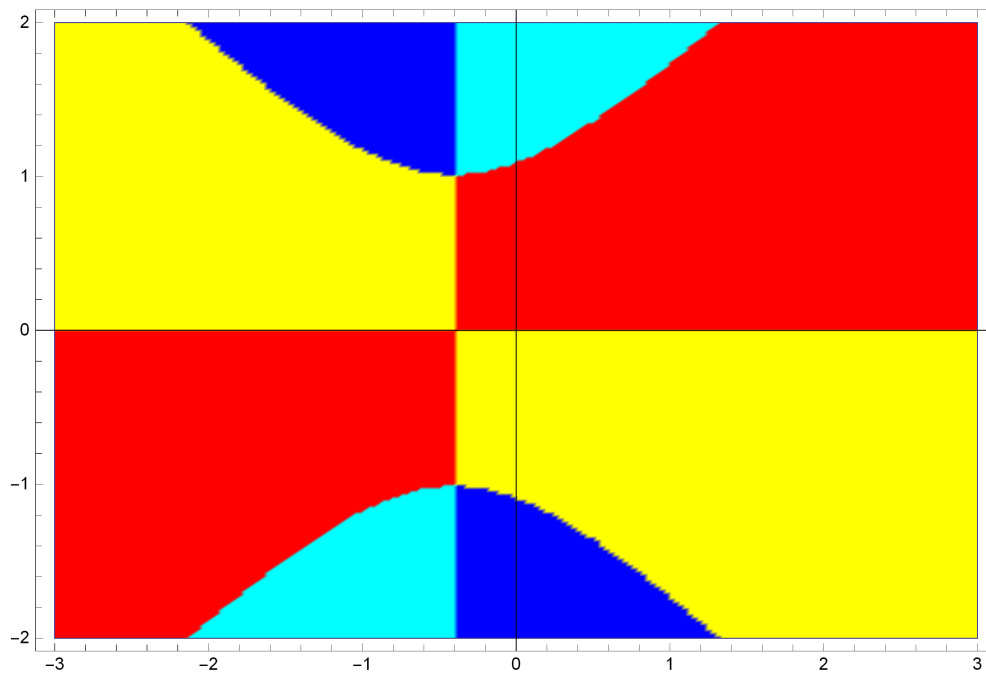
2.

$$w(z) = z^2 + 1. z - 1.54$$



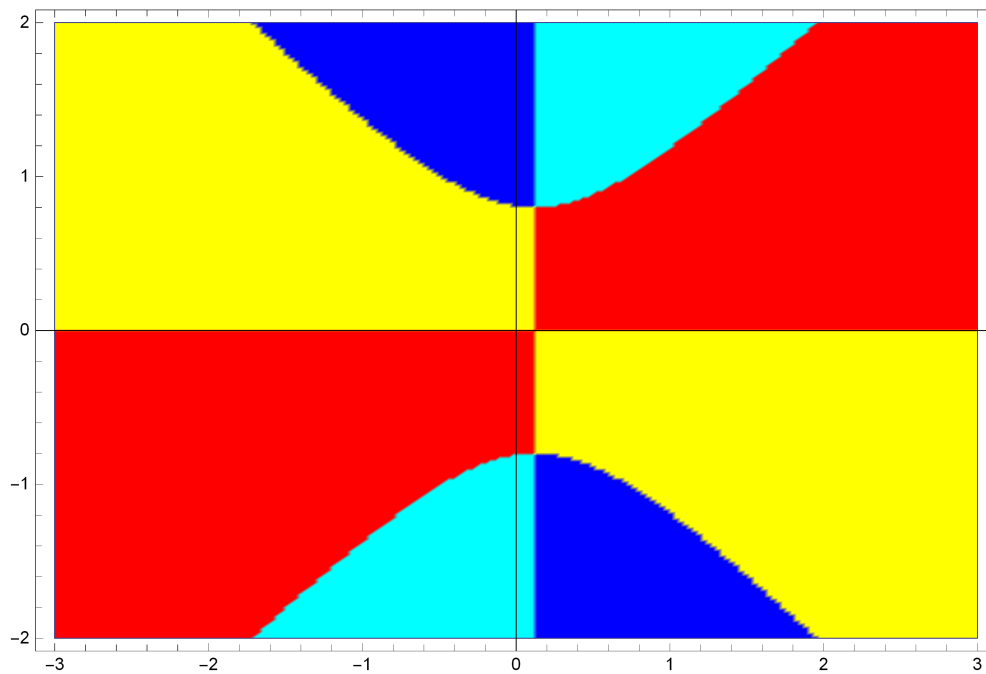
3.

$$w(z) = z^2 + 0.81z + 1.19$$



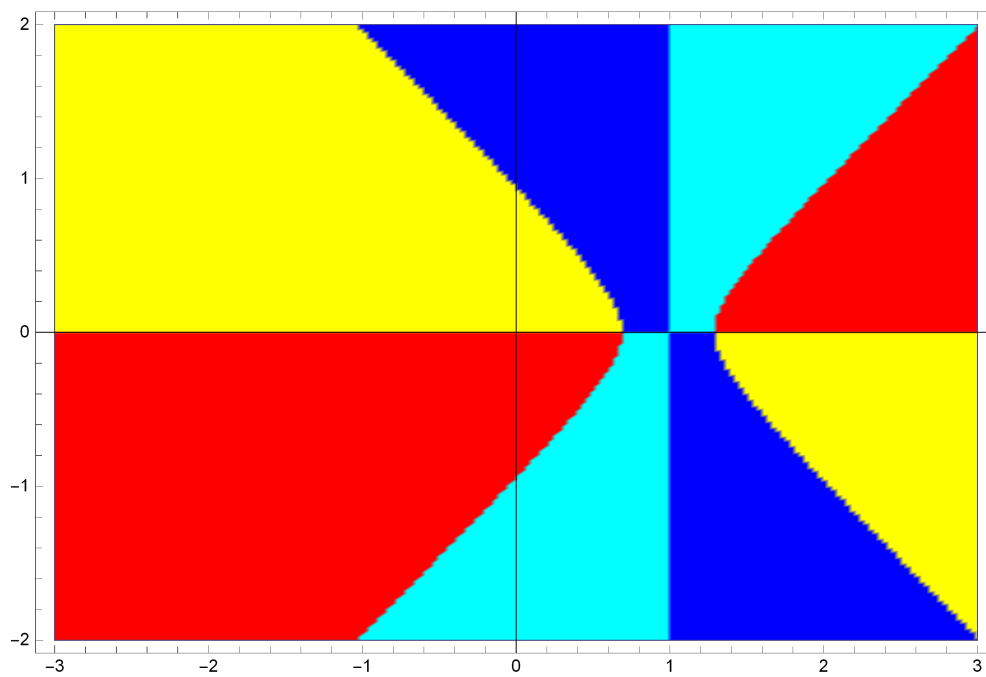
4.

$$w(z) = z^2 - 0.24z + 0.65$$



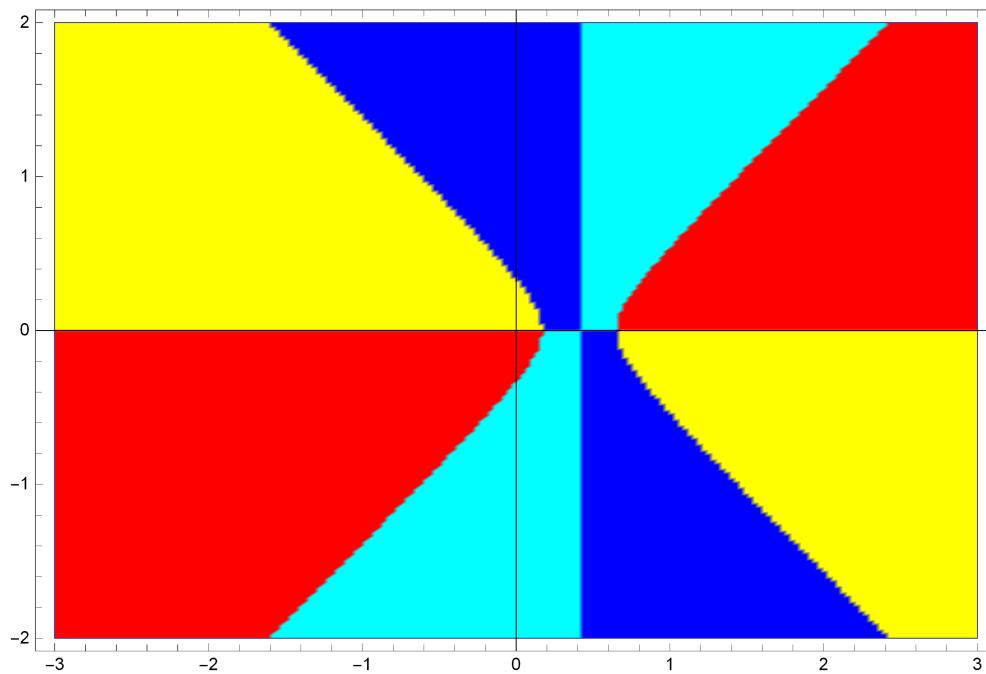
5.

$$w(z) = z^2 - 1.98z + 0.89$$



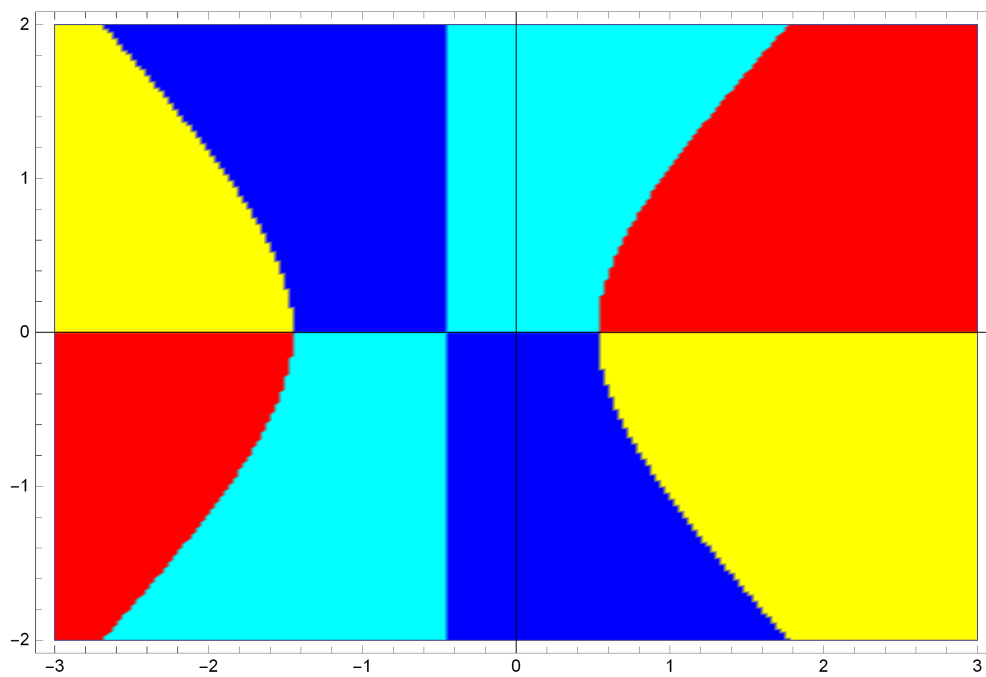
6.

$$w(z) = z^2 - 0.82z + 0.11$$



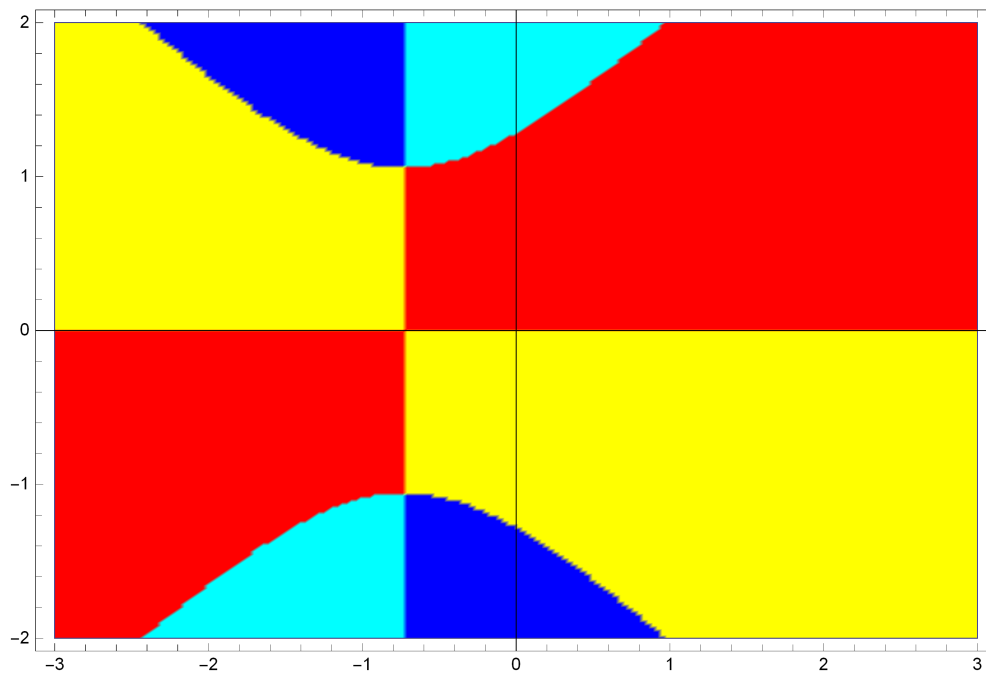
7.

$$w(z) = z^2 + 0.92z - 0.77$$



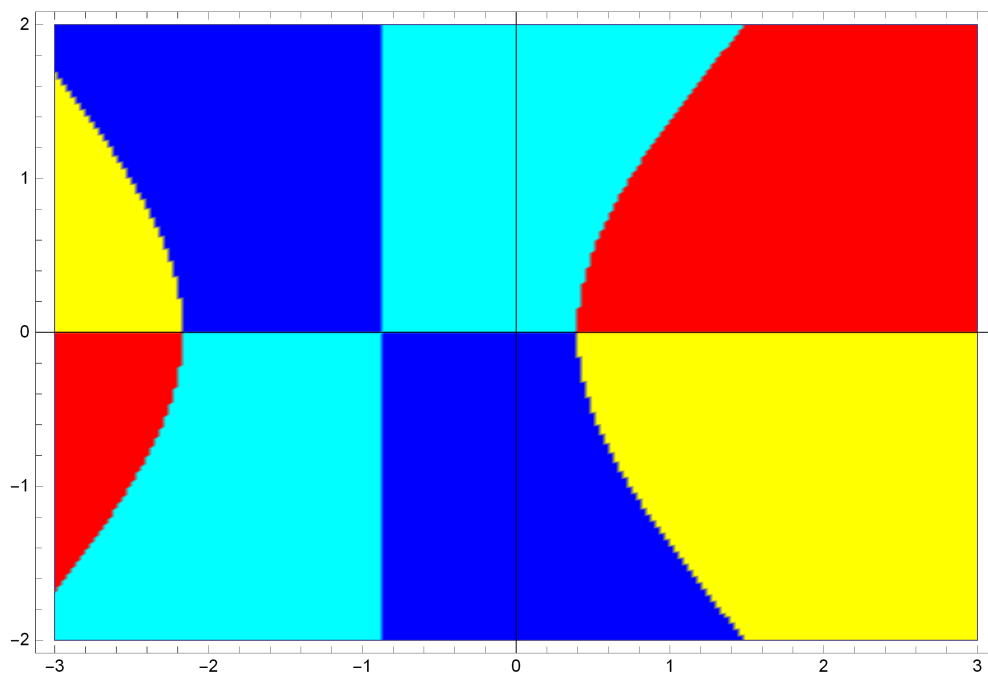
8.

$$w(z) = z^2 + 1.46z + 1.65$$



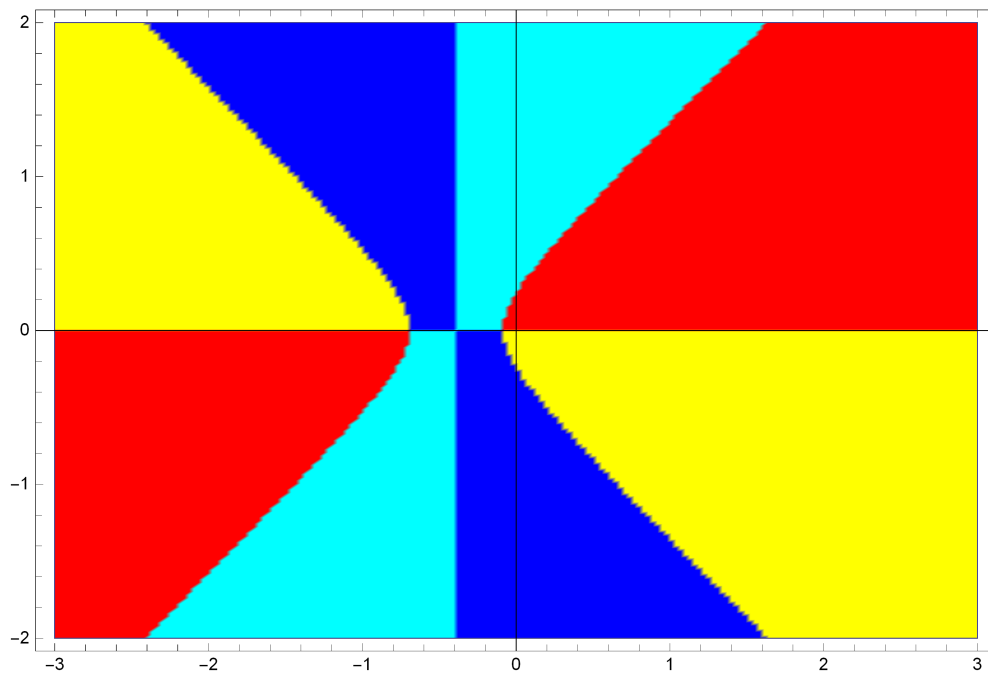
9.

$$w(z) = z^2 + 1.77z - 0.86$$



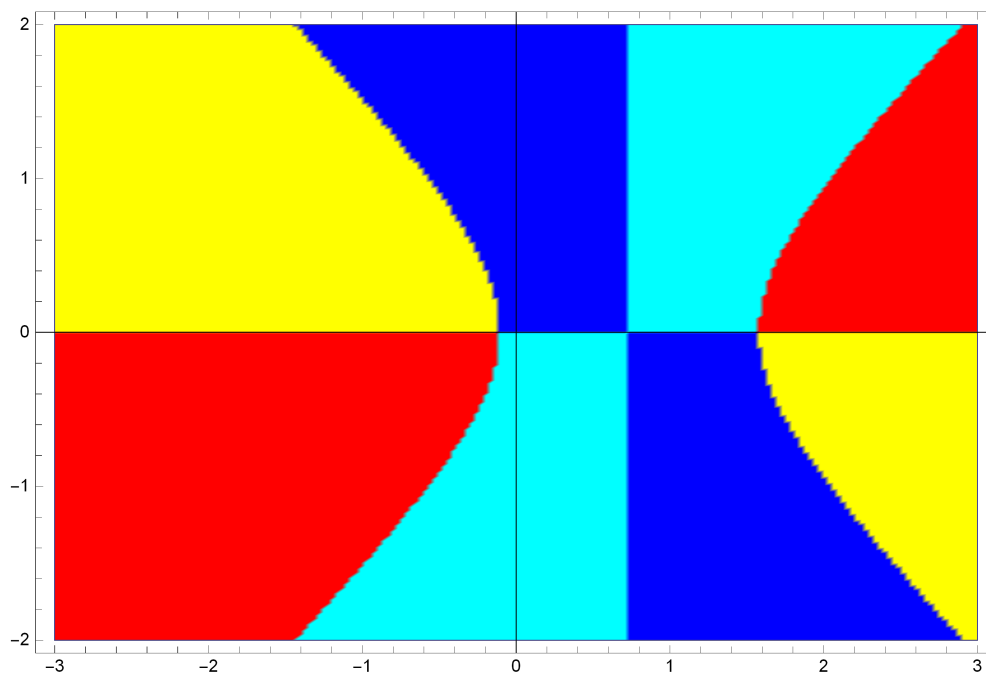
10.

$$w(z) = z^2 + 0.78z + 0.06$$



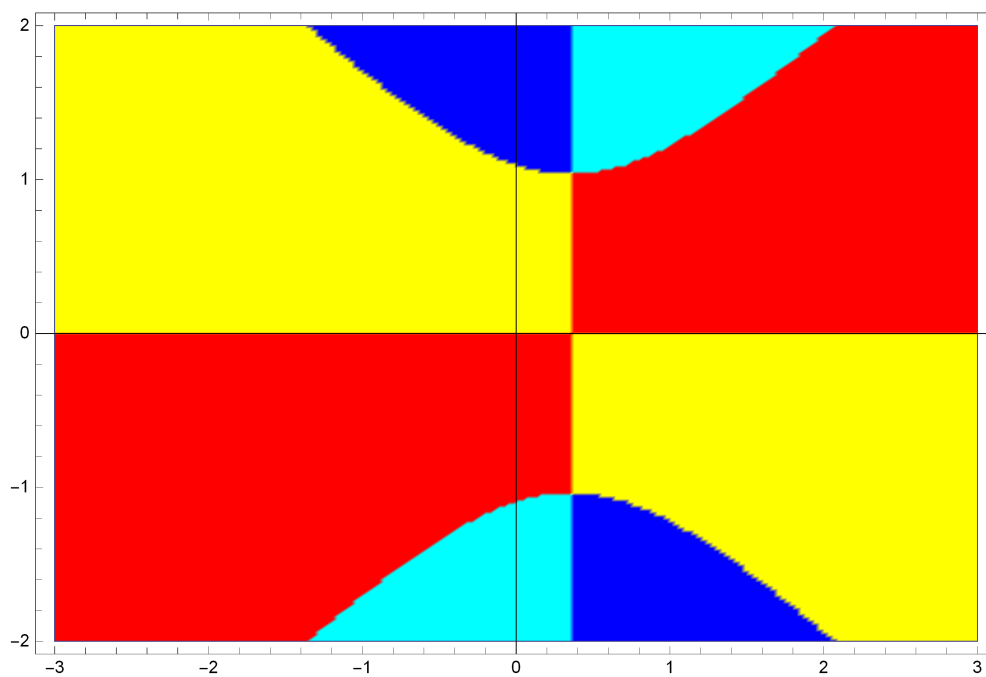
11.

$$w(z) = z^2 - 1.47z - 0.17$$



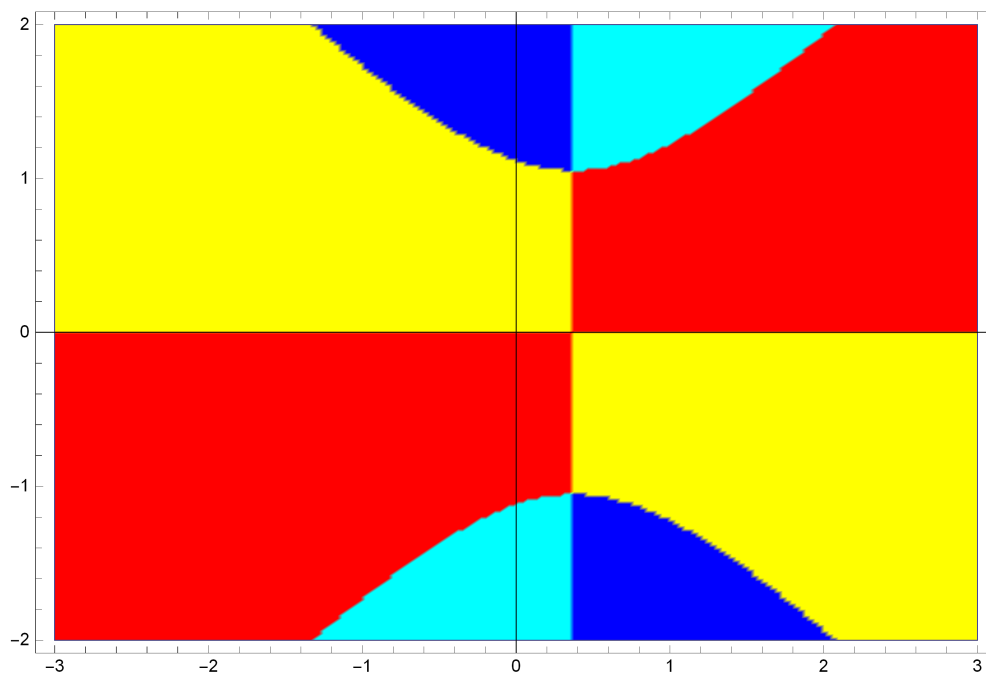
12.

$$w(z) = z^2 - 0.71z + 1.2$$



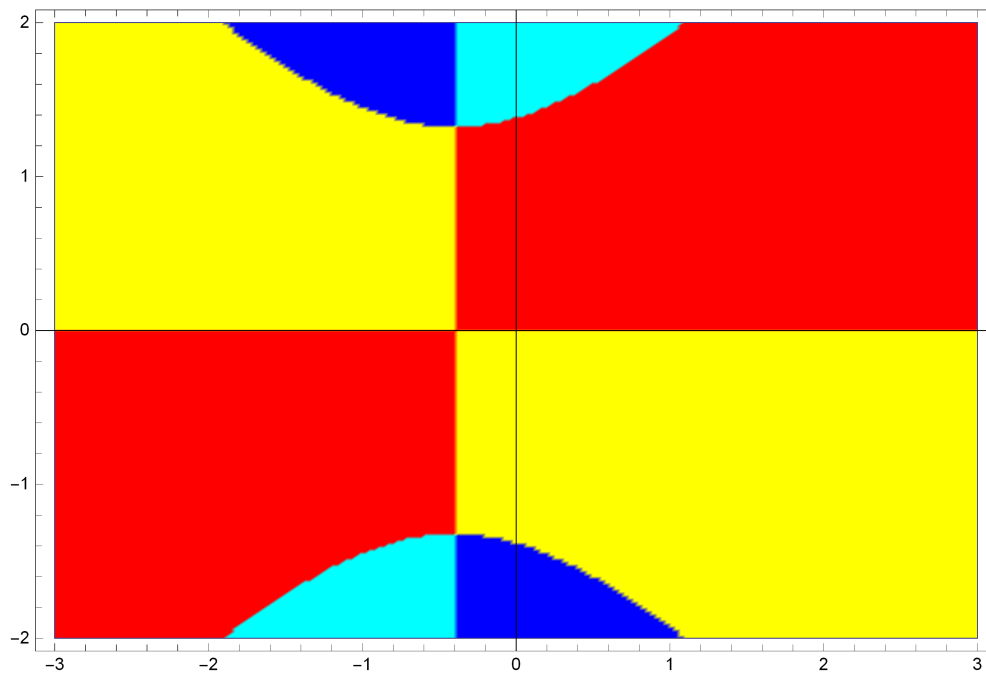
13.

$$w(z) = z^2 - 0.75z + 1.25$$



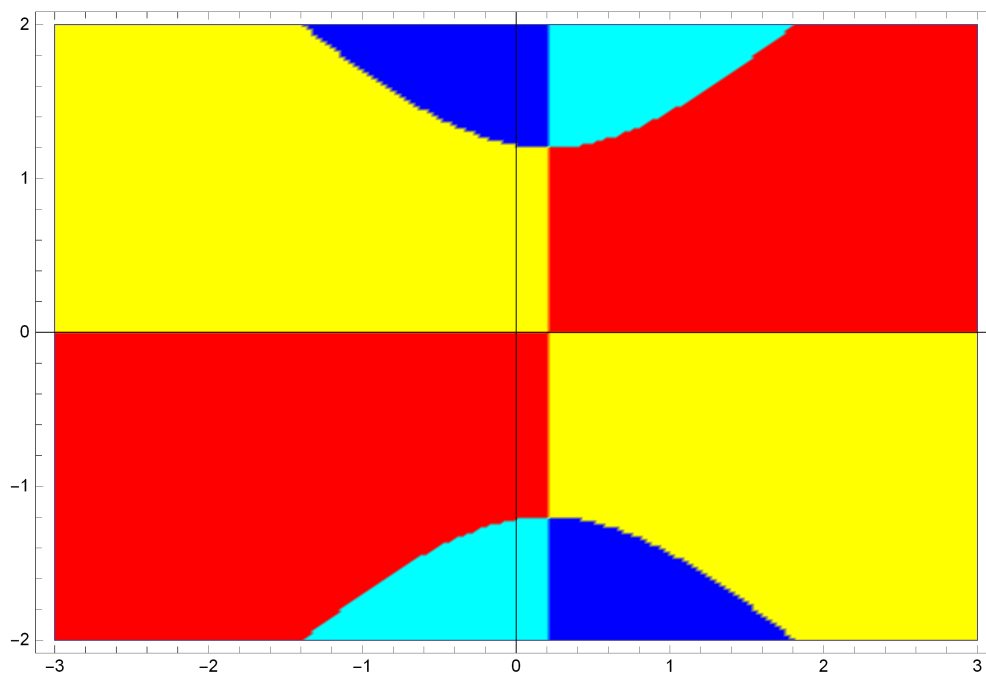
14.

$$w(z) = z^2 + 0.81z + 1.91$$



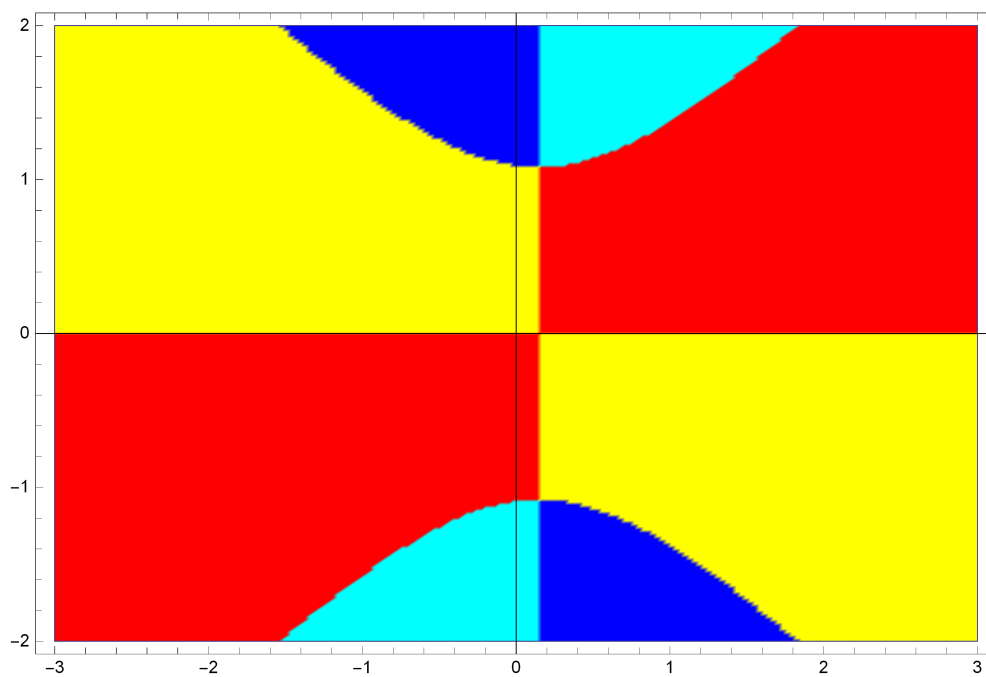
15.

$$w(z) = z^2 - 0.42z + 1.48$$



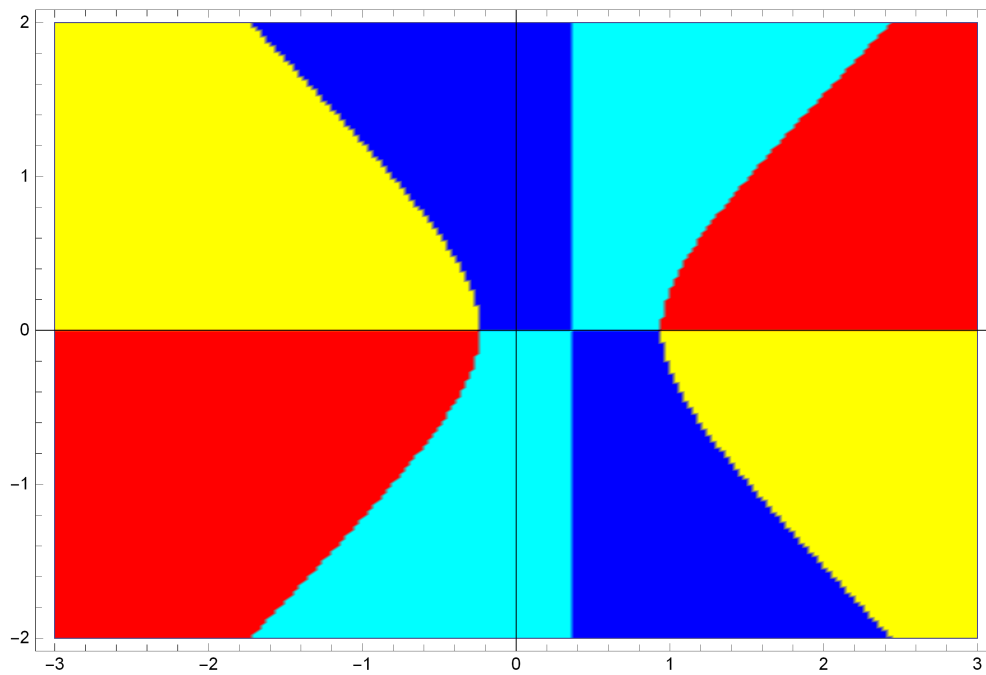
16.

$$w(z) = z^2 - 0.29z + 1.19$$



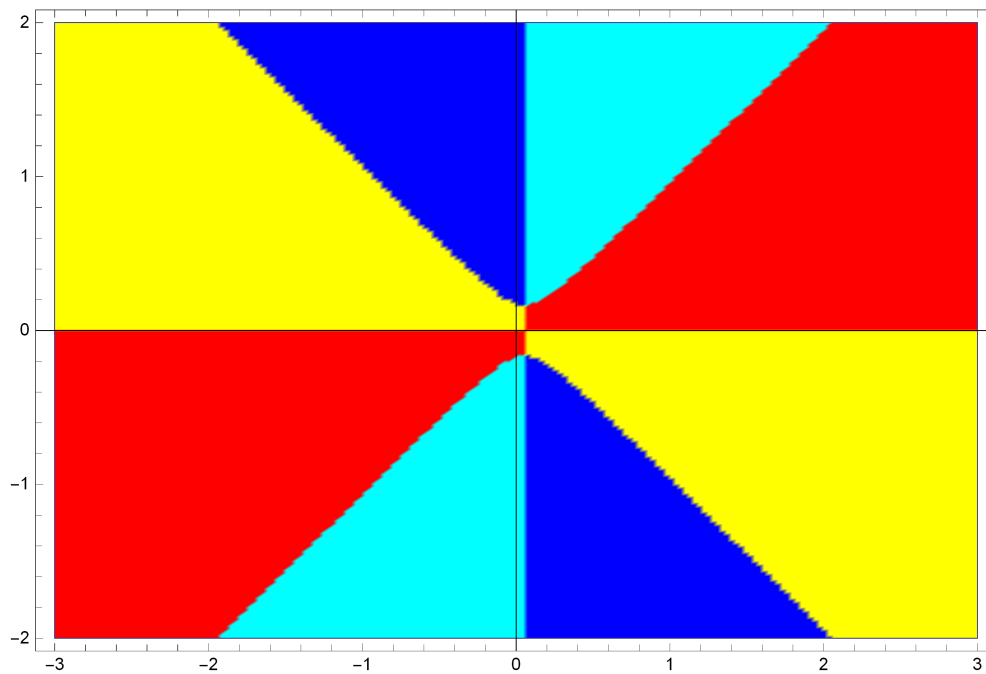
17.

$$w(z) = z^2 - 0.71z - 0.22$$



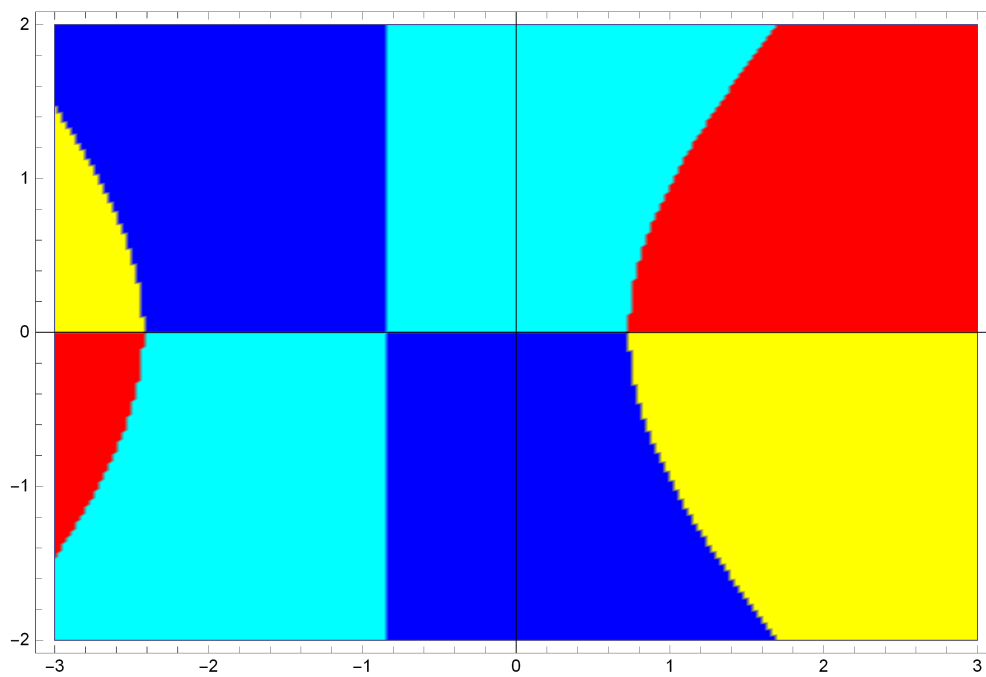
18.

$$w(z) = z^2 - 0.11z + 0.03$$



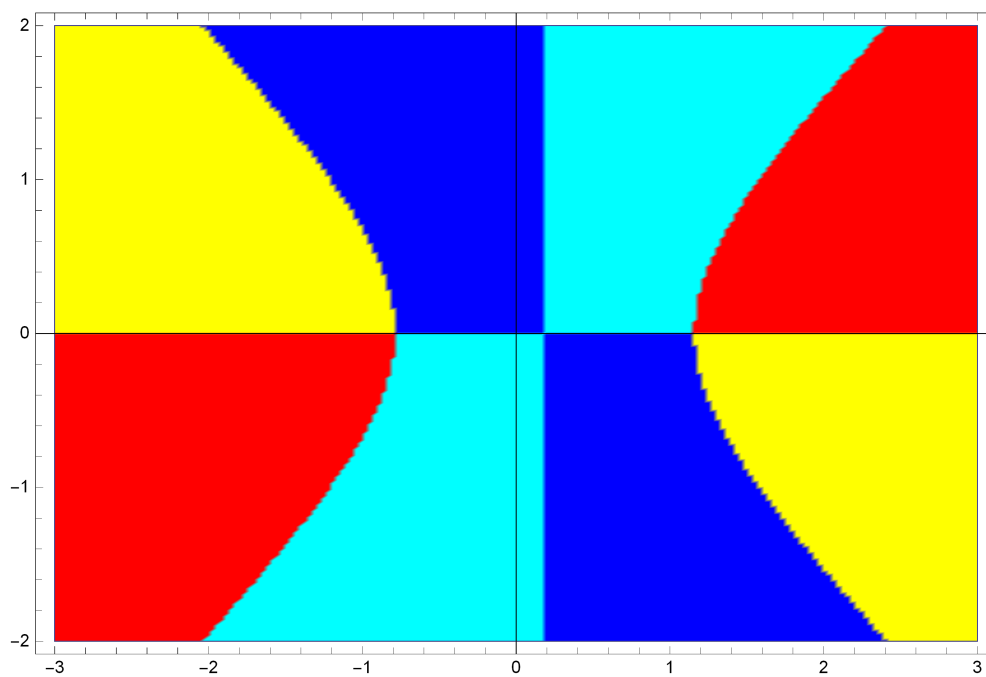
19.

$$w(z) = z^2 + 1.69z - 1.78$$



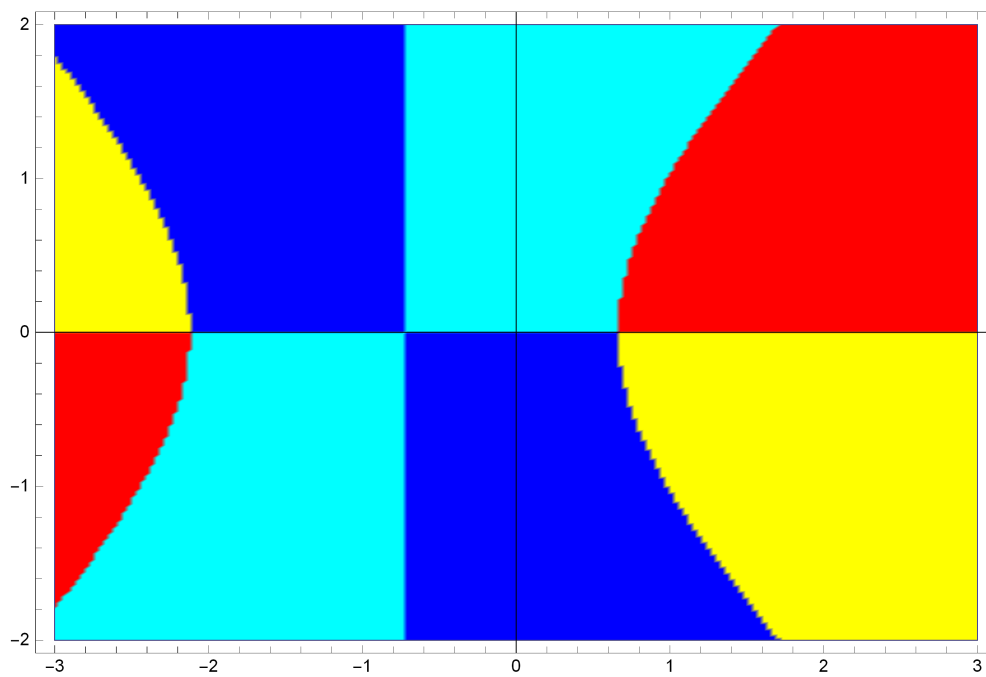
20.

$$w(z) = z^2 - 0.37z - 0.91$$



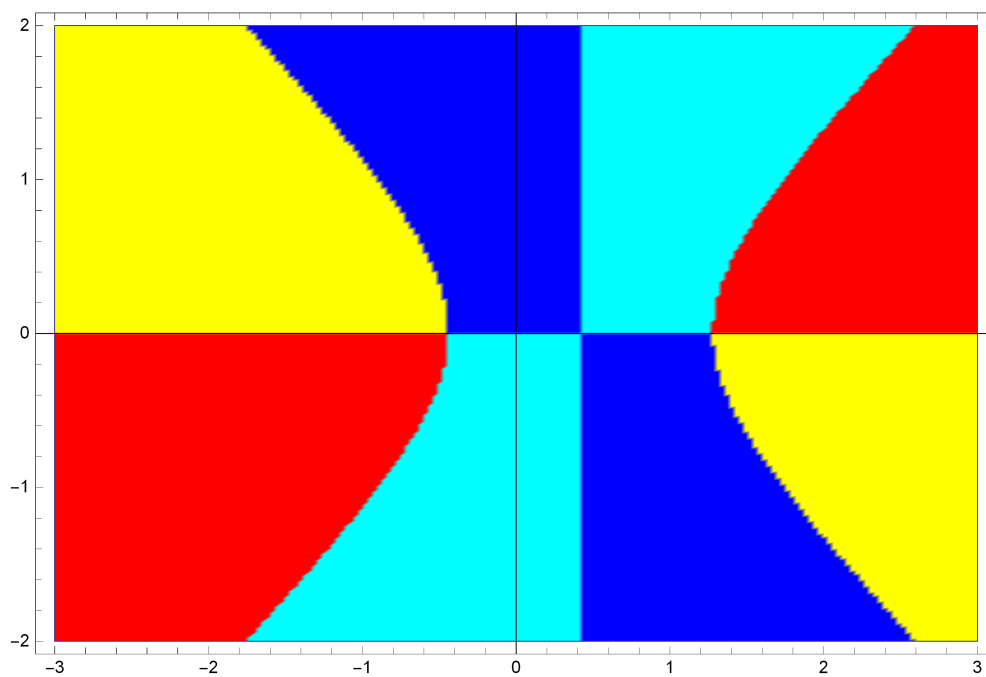
21.

$$w(z) = z^2 + 1.46z - 1.4$$



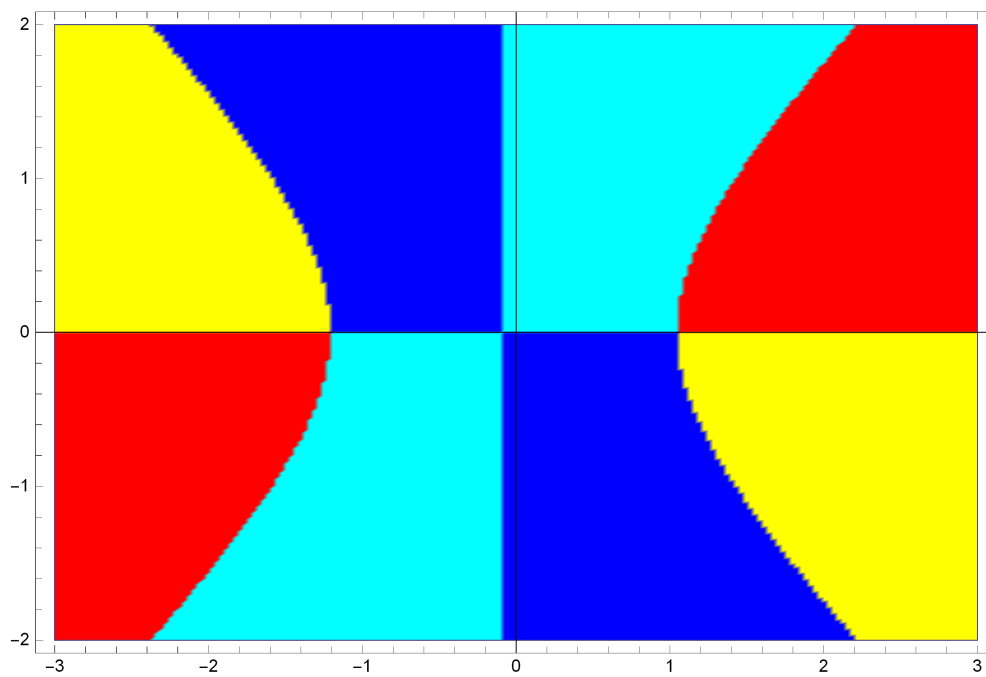
22.

$$w(z) = z^2 - 0.84z - 0.56$$



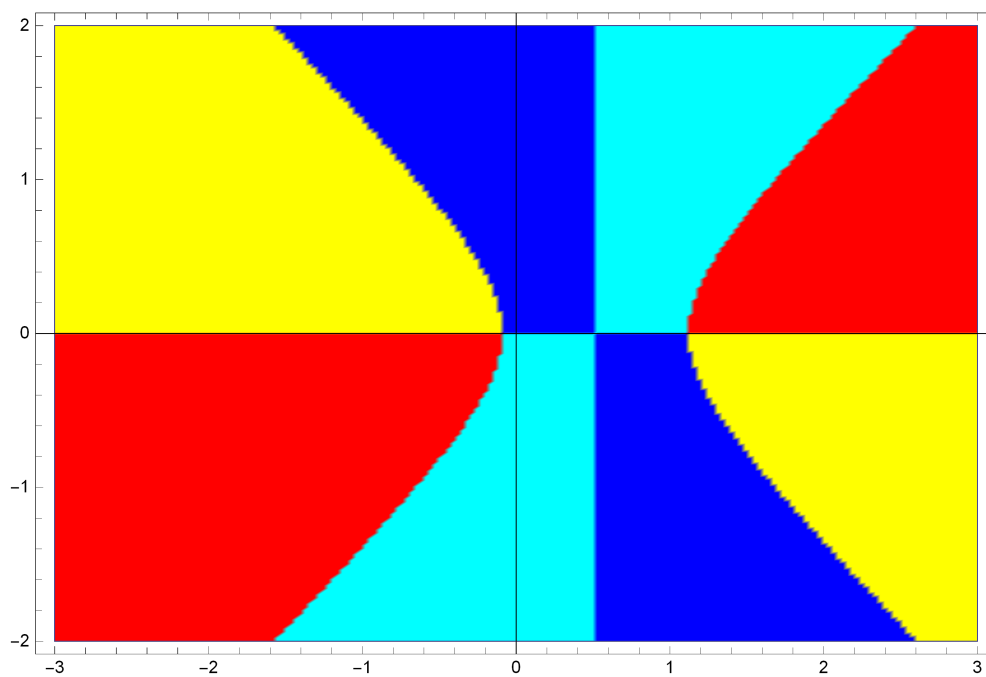
23.

$$w(z) = z^2 + 0.16z - 1.26$$



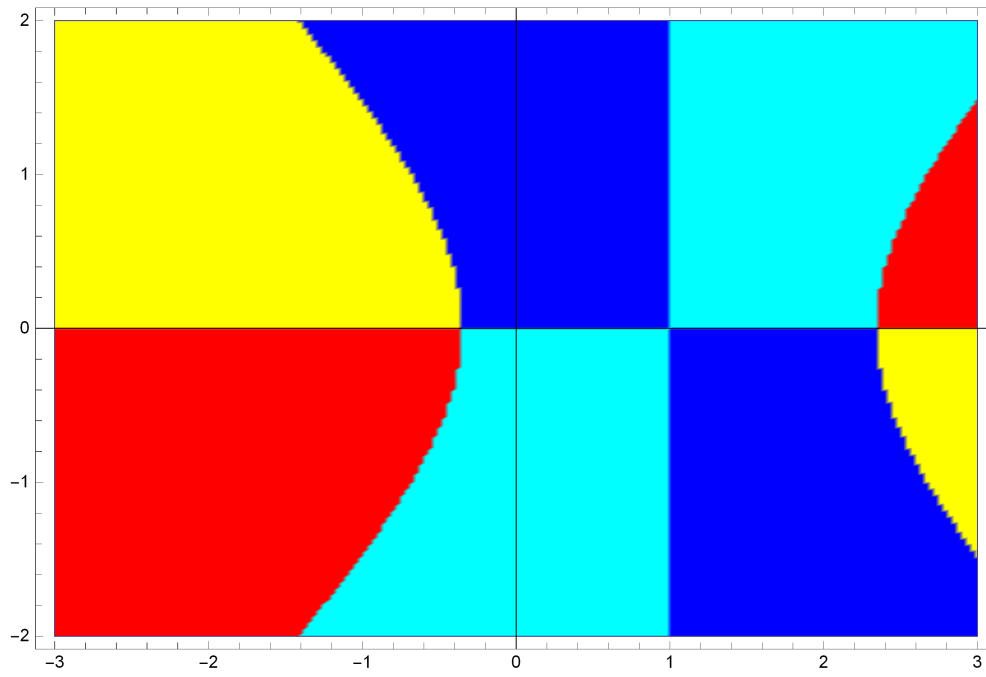
24.

$$w(z) = z^2 - 1.03z - 0.1$$



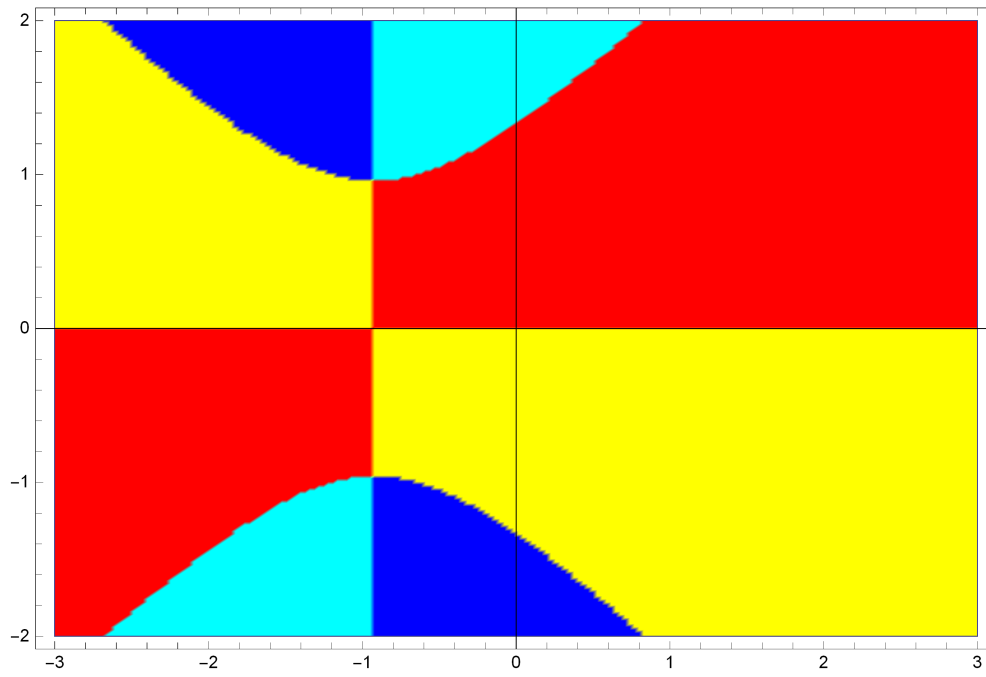
25.

$$w(z) = z^2 - 1.99z - 0.82$$



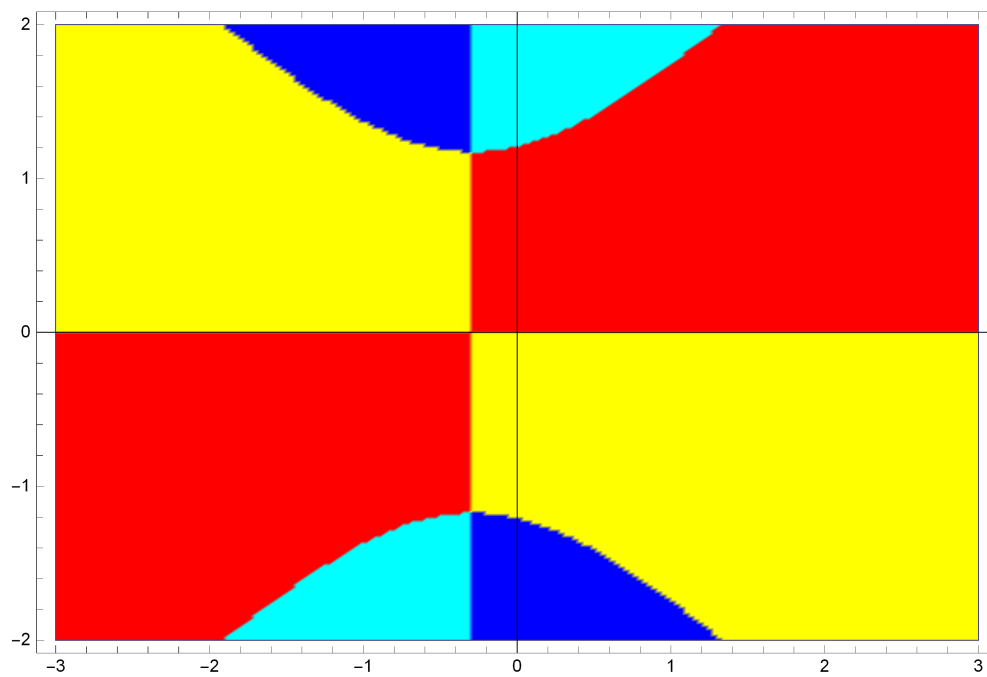
26.

$$w(z) = z^2 + 1.85z + 1.78$$



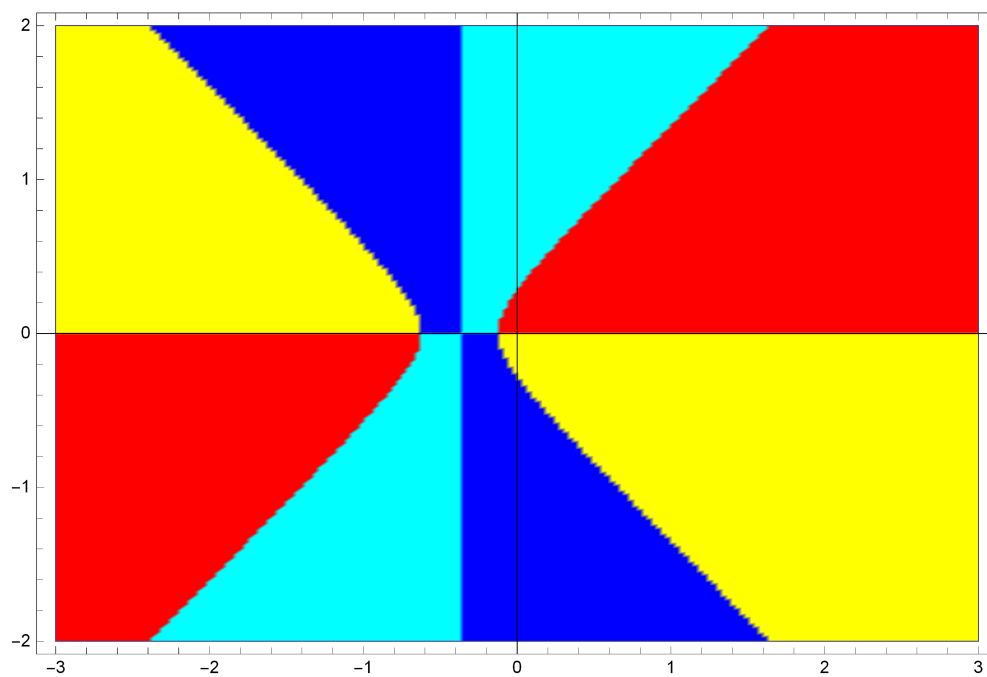
27.

$$w(z) = z^2 + 0.58z + 1.46$$



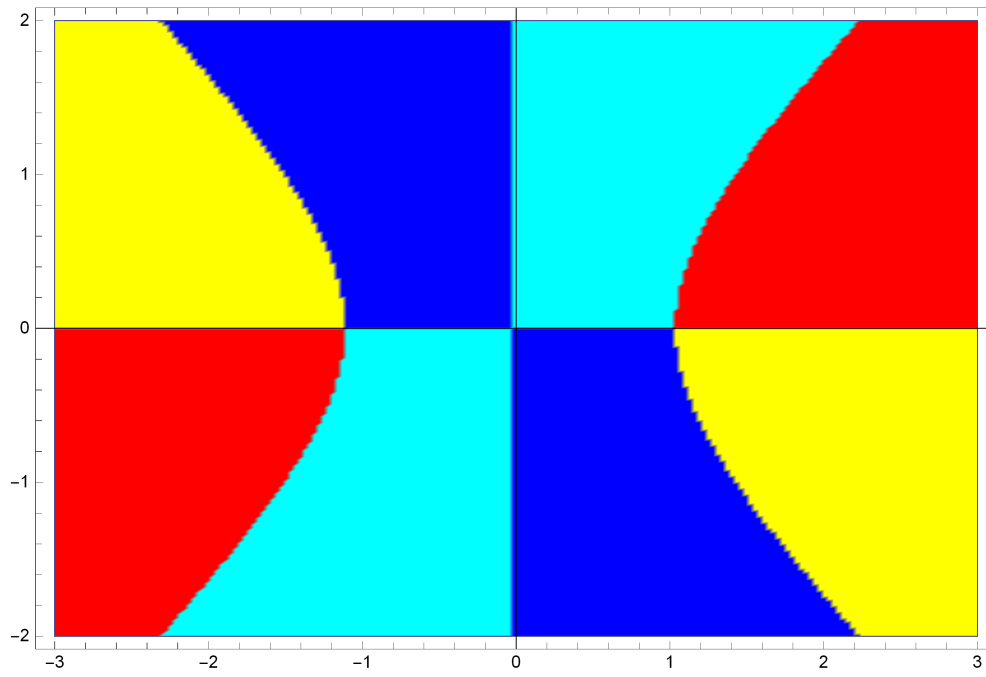
28.

$$w(z) = z^2 + 0.75z + 0.08$$



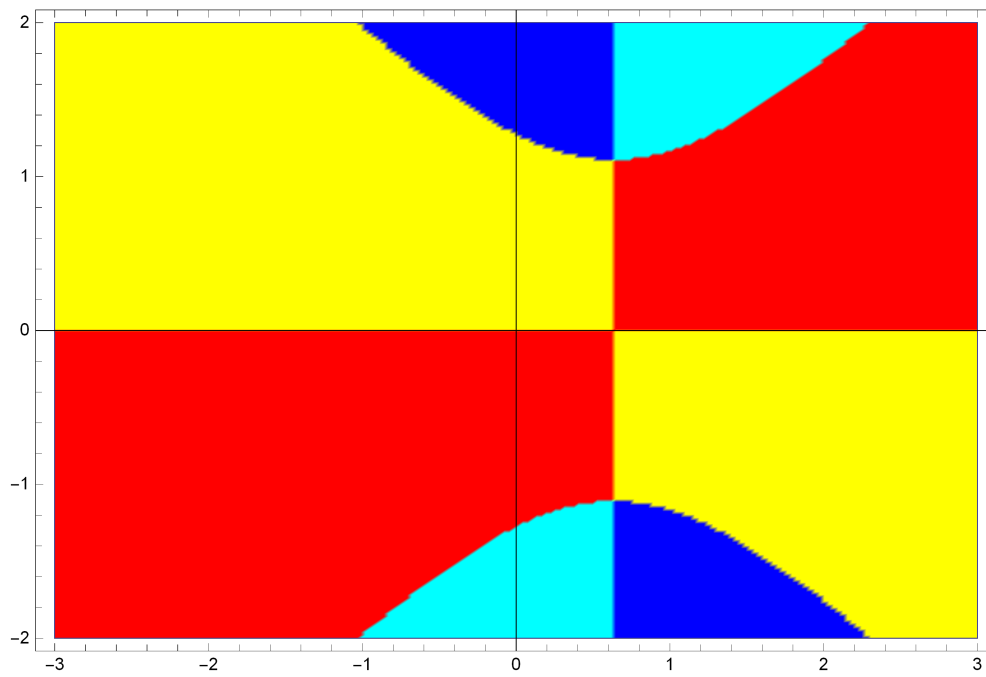
29.

$$w(z) = z^2 + 0.08z - 1.15$$



30.

$$w(z) = z^2 - 1.27z + 1.63$$



Rešitve:

1.

$$w(z) = z^2 - 0.26z - 1.06$$

$$z_1 = -0.907738$$

$$z_2 = 1.16774$$

2.

$$w(z) = z^2 + 1. z - 1.54$$

$$z_1 = -1.83791$$

$$z_2 = 0.837909$$

3.

$$w(z) = z^2 + 0.81z + 1.19$$

$$z_1 = -0.405 - 1.0129i$$

$$z_2 = -0.405 + 1.0129i$$

4.

$$w(z) = z^2 - 0.24z + 0.65$$

$$z_1 = 0.12 - 0.797245i$$

$$z_2 = 0.12 + 0.797245i$$

5.

$$w(z) = z^2 - 1.98z + 0.89$$

$$z_1 = 0.689833$$

$$z_2 = 1.29017$$

6.

$$w(z) = z^2 - 0.82z + 0.11$$

$$z_1 = 0.168961$$

$$z_2 = 0.651039$$

7.

$$w(z) = z^2 + 0.92z - 0.77$$

$$z_1 = -1.45076$$

$$z_2 = 0.530757$$

8.

$$w(z) = z^2 + 1.46z + 1.65$$

$$z_1 = -0.73 - 1.05693i$$

$$z_2 = -0.73 + 1.05693i$$

9.

$$w(z) = z^2 + 1.77z - 0.86$$

$$z_1 = -2.16688$$

$$z_2 = 0.396883$$

10.

$$w(z) = z^2 + 0.78z + 0.06$$

$$z_1 = -0.69348$$

$$z_2 = -0.0865202$$

11.

$$w(z) = z^2 - 1.47z - 0.17$$

$$z_1 = -0.107748$$

$$z_2 = 1.57775$$

12.

$$w(z) = z^2 - 0.71z + 1.2$$

$$z_1 = 0.355 - 1.03633i$$

$$z_2 = 0.355 + 1.03633i$$

13.

$$w(z) = z^2 - 0.75z + 1.25$$

$$z_1 = 0.375 - 1.05327i$$

$$z_2 = 0.375 + 1.05327i$$

14.

$$w(z) = z^2 + 0.81z + 1.91$$

$$z_1 = -0.405 - 1.32135i$$

$$z_2 = -0.405 + 1.32135i$$

15.

$$w(z) = z^2 - 0.42z + 1.48$$

$$z_1 = 0.21 - 1.19829i$$

$$z_2 = 0.21 + 1.19829i$$

16.

$$w(z) = z^2 - 0.29z + 1.19$$

$$z_1 = 0.145 - 1.08119i$$

$$z_2 = 0.145 + 1.08119i$$

17.

$$w(z) = z^2 - 0.71z - 0.22$$

$$z_1 = -0.233239$$

$$z_2 = 0.943239$$

18.

$$w(z) = z^2 - 0.11z + 0.03$$

$$z_1 = 0.055 - 0.164241i$$

$$z_2 = 0.055 + 0.164241i$$

19.

$$w(z) = z^2 + 1.69z - 1.78$$

$$z_1 = -2.42425$$

$$z_2 = 0.734248$$

20.

$$w(z) = z^2 - 0.37z - 0.91$$

$$z_1 = -0.786712$$

$$z_2 = 1.15671$$

21.

$$w(z) = z^2 + 1.46z - 1.4$$

$$z_1 = -2.12029$$

$$z_2 = 0.660288$$

22.

$$w(z) = z^2 - 0.84z - 0.56$$

$$z_1 = -0.438138$$

$$z_2 = 1.27814$$

23.

$$w(z) = z^2 + 0.16z - 1.26$$

$$z_1 = -1.20534$$

$$z_2 = 1.04534$$

24.

$$w(z) = z^2 - 1.03z - 0.1$$

$$z_1 = -0.0893385$$

$$z_2 = 1.11934$$

25.

$$w(z) = z^2 - 1.99z - 0.82$$

$$z_1 = -0.350372$$

$$z_2 = 2.34037$$

26.

$$w(z) = z^2 + 1.85z + 1.78$$

$$z_1 = -0.925 - 0.961444i$$

$$z_2 = -0.925 + 0.961444i$$

27.

$$w(z) = z^2 + 0.58z + 1.46$$

$$z_1 = -0.29 - 1.17299i$$

$$z_2 = -0.29 + 1.17299i$$

28.

$$w(z) = z^2 + 0.75z + 0.08$$

$$z_1 = -0.621221$$

$$z_2 = -0.128779$$

29.

$$w(z) = z^2 + 0.08z - 1.15$$

$$z_1 = -1.11313$$

$$z_2 = 1.03313$$

30.

$$w(z) = z^2 - 1.27z + 1.63$$

$$z_1 = 0.635 - 1.1076i$$

$$z_2 = 0.635 + 1.1076i$$

referenca : Izidor Hafner Plotting Rational Functions of a Complex Variable

[http://](http://demonstrations.wolfram.com/PlottingRationalFunctionsOfAComplexVariable/Wolfram)

demonstrations.wolfram.com/PlottingRationalFunctionsOfAComplexVariable/Wolfram

Demonstrations Project

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