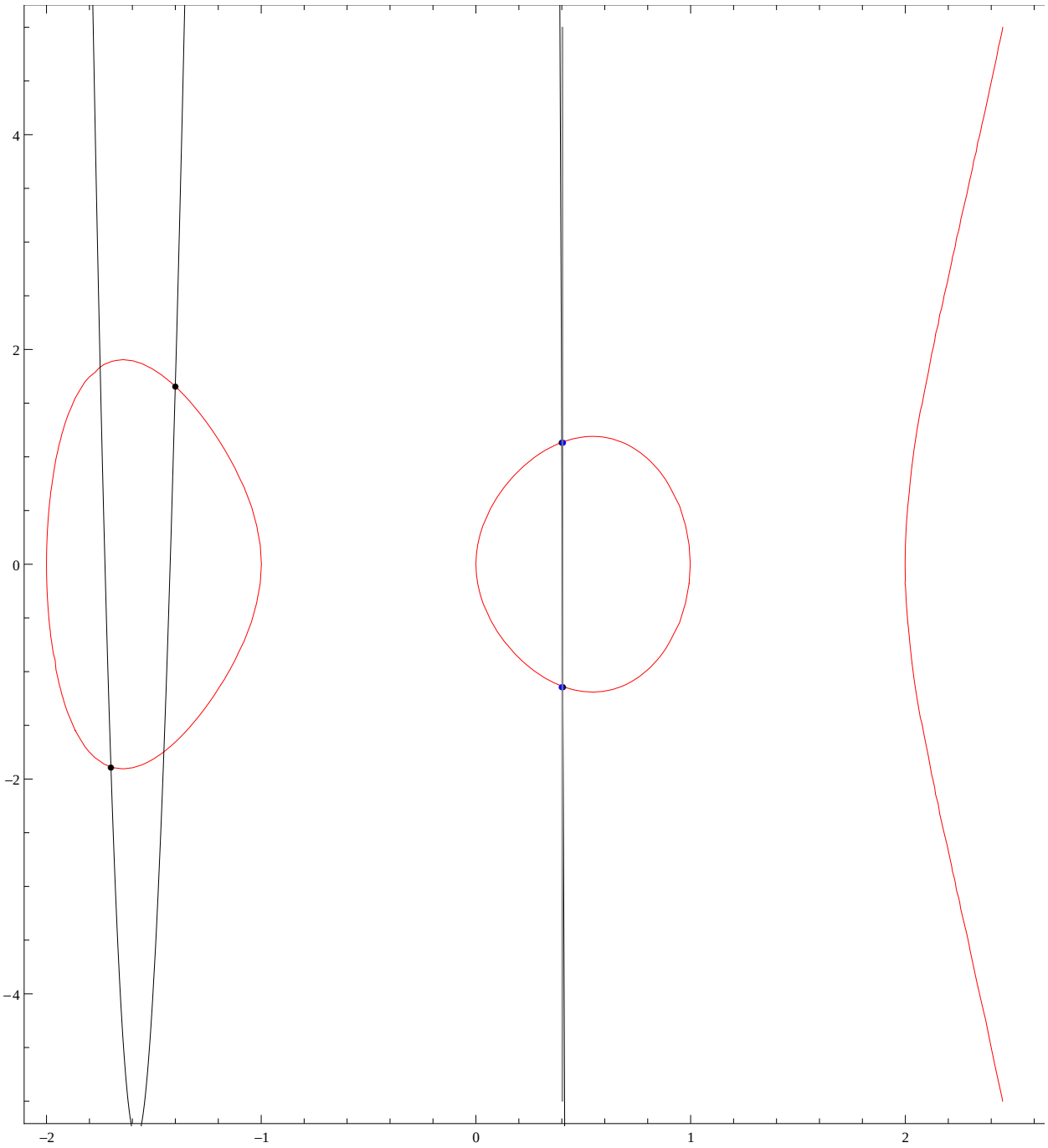
In[67]:=
```
Clear["Global`*"]
curveRHS = x^5 - 5 x^3 + 4 x; curve = curveRHS - y^2;

x1 = -1.7 ; x2 = -1.4; x3 = 0.4; x4 = 0.405;
y1 = y /. NSolve[{curve == 0, y < 0, x == x1}][[1]];
y2 = y /. NSolve[{curve == 0, y > 0, x == x2}][[1]];
y3 = y /. NSolve[{curve == 0, y > 0, x == x3}][[1]];
y4 = y /. NSolve[{curve == 0, y < 0, x == x4}][[1]];
P1 = {x1, y1}; P2 = {x2, y2}; P3 = {x3, y3}; P4 = {x4, y4};
Y = {y1, y2, y3, y4}; X = {x1, x2, x3, x4};
A = Transpose [{X^3, X^2, X, {1, 1, 1, 1}}];
{a, b, c, d} = LinearSolve[A, Y];
polynome = a * x^3 + b * x^2 + c * x + d;

x5 = x /. NSolve[curveRHS == polynome^2][[5]];
x6 = x /. NSolve[curveRHS == polynome^2][[6]];
y5 = - y /. NSolve[{y == polynome, x == x5}][[1]];
y6 = - y /. NSolve[{y == polynome, x == x6}][[1]];
P5 = {x5, y5}; P6 = {x6, y6};

xmin = -2; xmax = 3; ymin = -5 ; ymax = 5;
p1 = ContourPlot[curve == 0, {x, xmin, xmax}, {y, ymin, ymax}, ContourStyle → Red];
p2 = Plot[polynome, {x, xmin, xmax}, PlotStyle → Black];
p3 = ListPlot[{P1, P2, P3, P4}, PlotStyle → Black, PlotMarkers → {Automatic, Tiny}];
p4 = ListPlot[{P5, P6}, PlotStyle → Blue, PlotMarkers → {Automatic, Tiny}];
p5 =
  ContourPlot[{x == x5, x == x6}, {x, xmin, xmax}, {y, ymin, ymax}, ContourStyle → Gray];

Show[p1, p2, p3, p4, p5]
{{x5, y5}, {x6, y6}};
xa = x /. NSolve[curveRHS == polynome^2][[1]]
xb = x /. NSolve[curveRHS == polynome^2][[3]]
ya = - y /. NSolve[{y == polynome, x == xa}];
yb = - y /. NSolve[{y == polynome, x == xb}];
ya
yb
y1
y2
```

Out[90]=



Out[92]= −1.75021

Out[93]= −1.45327

Out[96]= {−1.83923}

Out[97]= {1.74673}

Out[98]= −1.8885

Out[99]= 1.65583