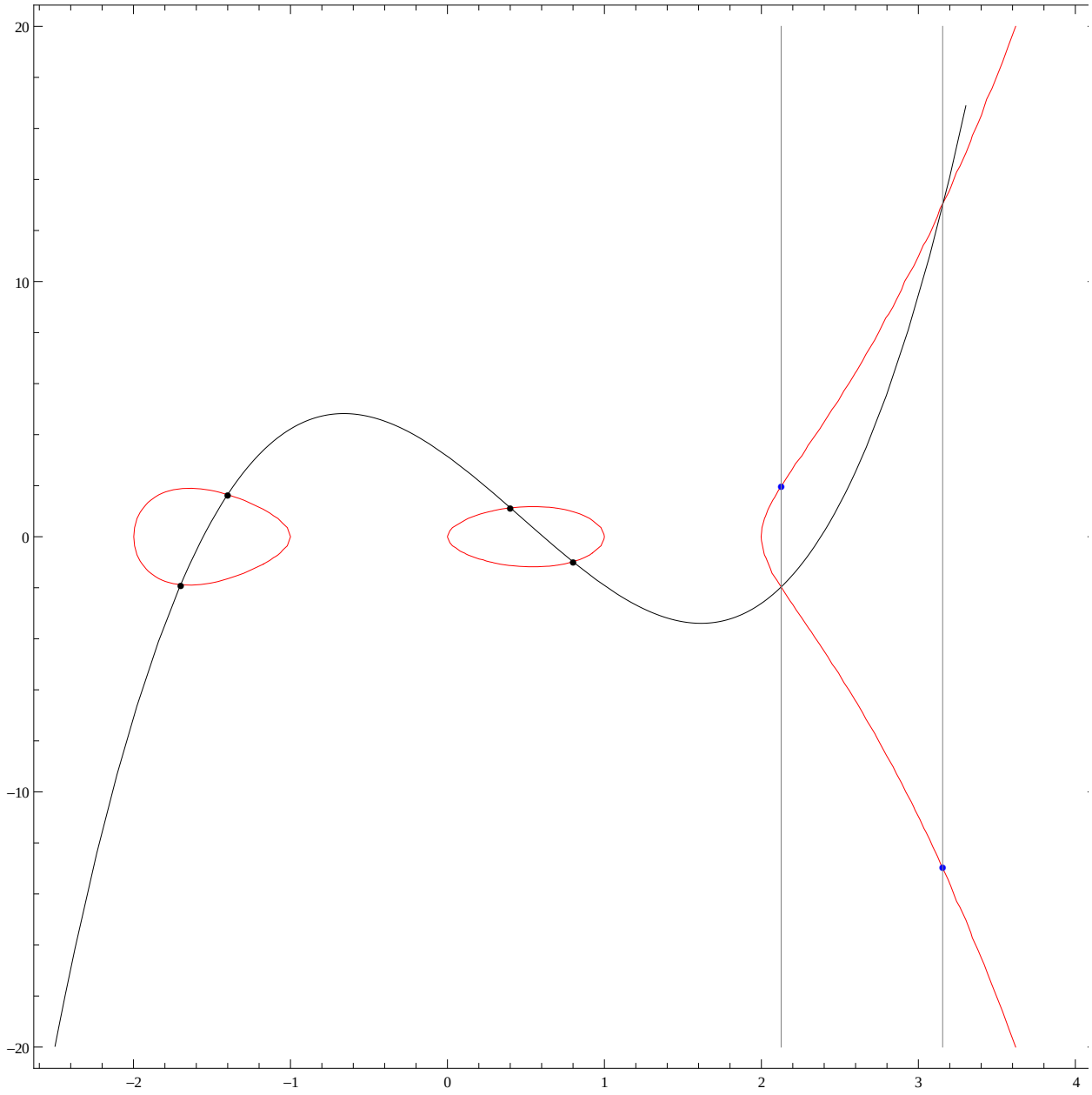
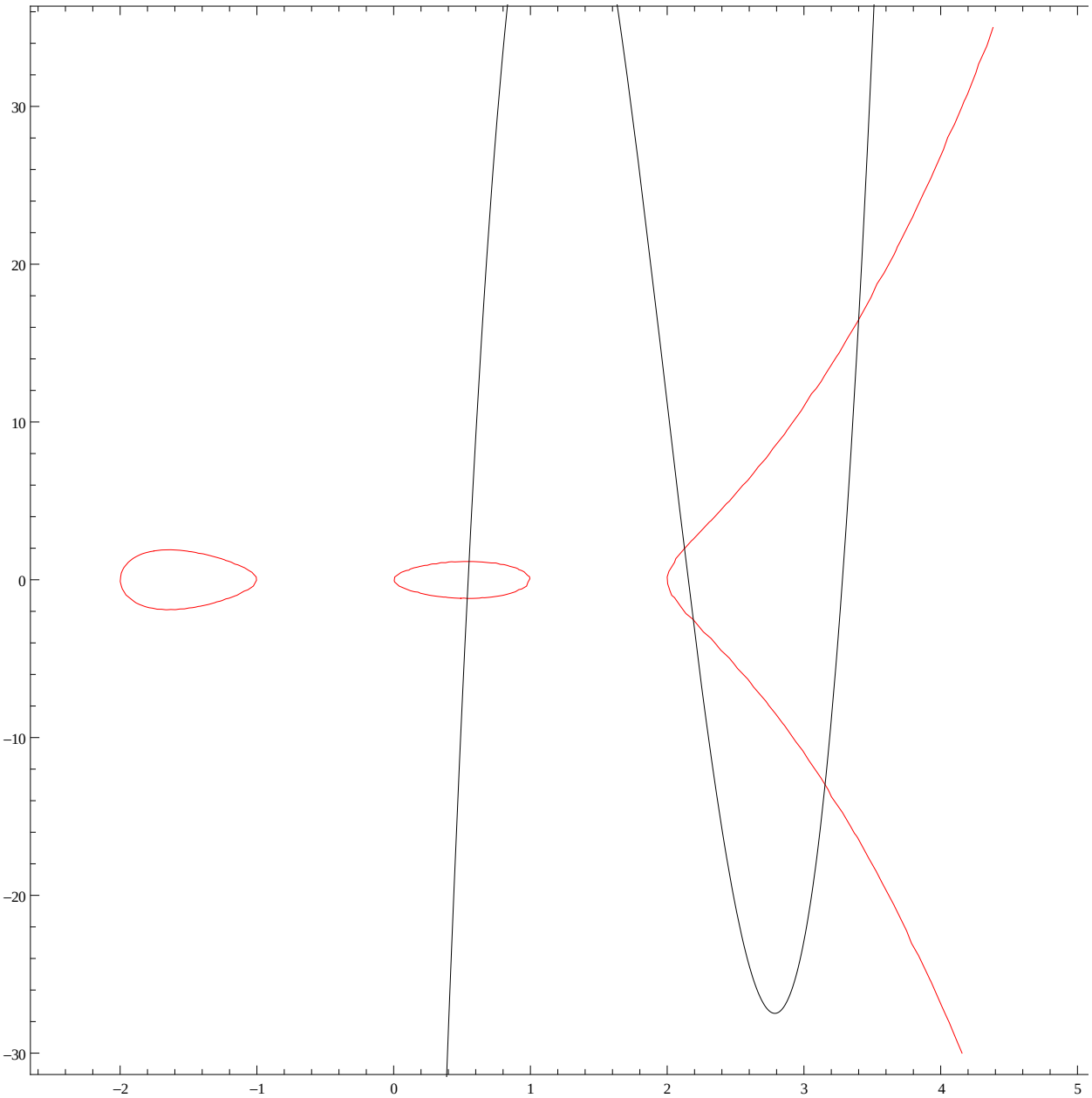
```
Clear["Global`*"]
curveRHS = x^5 - 5 x^3 + 4 x; curve = curveRHS - y^2;

x1 = -1.7 ; x2 = -1.4; x3 = 0.4; x4 = 0.8;
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 = -2.5; xmax = 4 ; ymin = -20 ; ymax = 20;
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}}
```




```
{{2.12579, 1.97041}, {3.15475, -12.9659}}
```

```
x7 = 2.19; x8 = 3.4; (*0.6 0.2*)
y7 = y /. NSolve[{curve == 0, y < 0, x == x7}][[1]];
y8 = y /. NSolve[{curve == 0, y > 0, x == x8}][[1]];
Y = {y5, y6, y7, y8}; X = {x5, x6, x7, x8};
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;
xmin = -2.5; xmax = 5 ; ymin = -30 ; ymax = 35;
pah = ContourPlot[curve == 0, {x, xmin, xmax}, {y, ymin, ymax}, ContourStyle → Red];
pleh = Plot[polynome, {x, xmin, xmax}, PlotStyle → Black];
Show[pah, pleh]
x /. NSolve[curveRHS == polynome^2]
```




```
{0.537617, 0.551452, 2.12579, 2.19, 3.15475, 3.4}
```