```
sol = Solve[r * x + 4 x^3 - 9 x^5 == 0, x]
```

Out[6]=
$$\left\{x \to 0,\ x \to -\frac{1}{3}\sqrt{2-\sqrt{4+9\,r}},\ x \to \frac{1}{3}\sqrt{2-\sqrt{4+9\,r}},\right.$$
$$\left. x \to -\frac{1}{3}\sqrt{2+\sqrt{4+9\,r}},\ x \to \frac{1}{3}\sqrt{2+\sqrt{4+9\,r}}\right\}$$

```
p1 = Plot[sol[[1, 2]], {r, -1, 0}, PlotStyle → Blue]
```

In[395]:=
```
p2 = Plot[sol[[1, 2]], {r, 0, 1}, PlotStyle → {Blue, Dashed}];
p3 = Plot[sol[[2, 2]], {r, -1, 1}, PlotStyle → {Blue, Dashed}];
p4 = Plot[sol[[3, 2]], {r, -1, 1}, PlotStyle → {{Blue, Dashed}, Blue}];
p5 = Plot[sol[[4, 2]], {r, -1, 1}, PlotStyle → Blue];
p6 = Plot[sol[[5, 2]], {r, -1, 1}, PlotStyle → Blue];
p7 = ListPlot[{{0, 0}}, PlotMarkers → {Automatic, 10},
   PlotStyle → Blue, PlotLegends → {"Subcritical pitchfork bifurcation"}];
p8 = ListPlot[{{-4 / 9, Sqrt[2] / 3}, {-4 / 9, -Sqrt[2] / 3}}, PlotMarkers →
    {Automatic, 10}, PlotStyle → Red, PlotLegends → {"Saddle node bifurication"}];
Show[p1, p2, p3, p4, p5, p6, p7, p8, Axes → {False, True},
 PlotRange → {{-0.75, 1.25}, {-1, 1}}]
```

Out[402]=