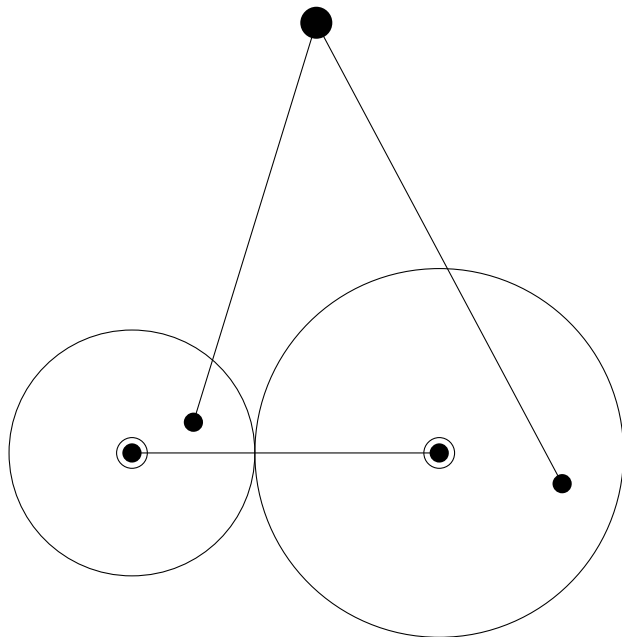## Beispiel mit Mathematica

```
Remove["Global`*"];

M1 = {0, 0}; M2 = {10, 0}; a = 4;
r1 = a; r2 = 10 - a;
P1 = {2, 1}; P2 = {14, -1};
Q = {6, 14};
Show[Graphics[{Circle[M1, r1], Circle[M2, r2], Circle[M1, 0.5`], Circle[M2, 0.5`],
    PointSize[0.03`], Point[M1], Point[M2], Point[P1], Point[P2], PointSize[0.05`],
    Point[Q], Line[{M1, M2}], Line[{P1, Q, P2}]}], AspectRatio → Automatic]
```



```
M1 = {0, 0}; M2 = {10, 0}; a = 4; r1 = a; r2 = 10 - a;
P1 = {2, 1}; P2 = {14, -1}; e1 = {1, 0}; e2 = {0, 1};
p1 = Norm[P1 - M1]; p2 = Norm[P2 - M2];
Q = {6, 14}; q1 = Norm[Q - P1]; q2 = Norm[Q - P2];
ϕ1o = ArcCos[(P1 - M1).e1 / p1]; ϕ2o = -ArcCos[(P2 - M2).e1 / p2];
ϕ1[t_] := t + ϕ1o; ϕ2[t_] := (-r1 / r2) * t + ϕ2o;
k1o[t_] := p1 * {Cos[ϕ1[t]], Sin[ϕ1[t]]} + M1;
k2o[t_] := p2 * {Cos[ϕ2[t]], Sin[ϕ2[t]]} + M2;
k1[x_, y_, t_] := ((x - k1o[t][[1]])^2 + (y - k1o[t][[2]])^2 == q1^2);
k2[x_, y_, t_] := ((x - k2o[t][[1]])^2 + (y - k2o[t][[2]])^2 == q2^2);
solv = Solve[{k1[x, y, t], k2[x, y, t]}, {x, y}];
x1 = x /. solv[[1]]; y1 = y /. solv[[1]];
x2 = x /. solv[[2]]; y2 = y /. solv[[2]];
ParametricPlot[{{x1, y1}, {x2, y2}}, {t, 0, 10 Pi}, PlotRange → {{-15, 15}, {4, 16}}]
```
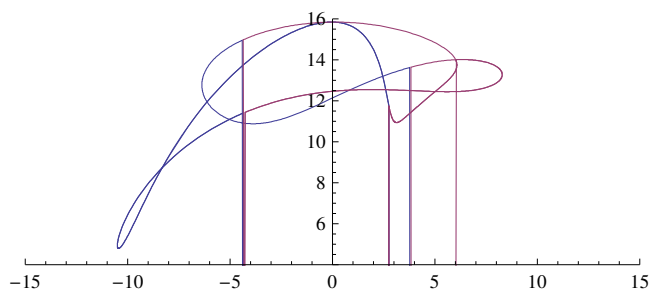
```
Show[Graphics[{Circle[M1, r1], Circle[M2, r2], Circle[M1, 0.5`],
    Circle[M2, 0.5`], PointSize[0.03`], Point[M1], Point[M2], Point[P1],
    Point[P2], PointSize[0.05`], Point[Q], Line[{M1, M2}], Line[{P1, Q, P2}]}],
 ParametricPlot[{{x1, y1}, {x2, y2}}, {t, 0, 10 Pi}], AspectRatio → Automatic]
```