

```
(*
interpolare Lagrange - forma parametrica
comportamentul la translatii, rotatii
*)
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```
In[ ]:= t0 = 0;
t1 = 1 / 2;
t2 = 1;
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```
In[ ]:= Lt0[t_] := (t - t1) (t - t2) /
(t0 - t1) (t0 - t2);

Lt1[t_] := (t - t0) (t - t2) /
(t1 - t0) (t1 - t2);

Lt2[t_] := (t - t0) (t - t1) /
(t2 - t0) (t2 - t1);
```

```
In[ ]:= x0 = 1; y0 = 1;
x1 = 2; y1 = 2;
x2 = -1; y2 = 3;
```

```
In[ ]:= Lt[t_] := Lt0[t] {x0, y0} + Lt1[t] {x1, y1} + Lt2[t] {x2, y2}
```

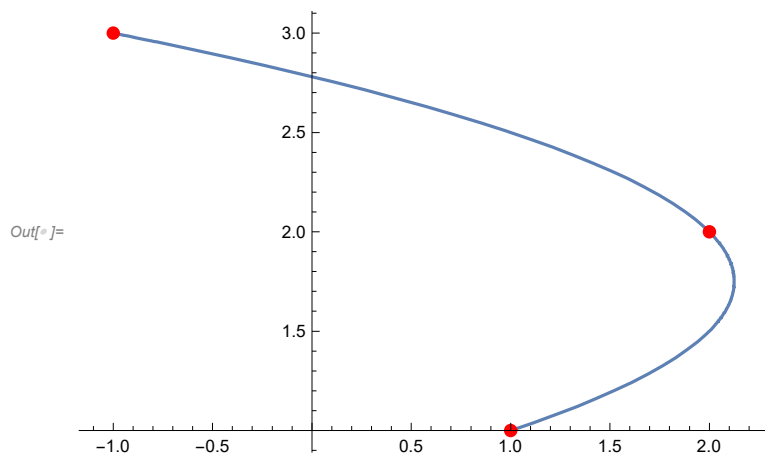
```
In[ ]:= Lt[t_] // Expand
```

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Out[ ]:= {1 + 6 t - 8 t^2, 1 + 2 t}
```

```
In[ ]:= c1 = ParametricPlot[Lt[t], {t, t0, t2}];
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```
In[ ]:= PA = Graphics[{Red, PointSize[Large], Point[{x0, y0}]}];
PB = Graphics[{Red, PointSize[Large], Point[{x1, y1}]}];
PC = Graphics[{Red, PointSize[Large], Point[{x2, y2}]}];
```

```
In[ ]:= Show[c1, PA, PB, PC]
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In[ ]:= th = -Pi / 2;
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In[ ]:= u0 = x0 Cos[th] - y0 Sin[th];
        u1 = x1 Cos[th] - y1 Sin[th];
        u2 = x2 Cos[th] - y2 Sin[th];

In[ ]:= w0 = x0 Sin[th] + y0 Cos[th];
        w1 = x1 Sin[th] + y1 Cos[th];
        w2 = x2 Sin[th] + y2 Cos[th];

In[ ]:= Lt[t_] := Lt0[t] {u0, w0} + Lt1[t] {u1, w1} + Lt2[t] {u2, w2}

In[ ]:= c2 = ParametricPlot[Lt[t], {t, t0, t2}, PlotStyle -> Magenta];

In[ ]:= PA = Graphics[{Green, PointSize[Large], Point[{u0, w0}]}];
        PB = Graphics[{Green, PointSize[Large], Point[{u1, w1}]}];
        PC = Graphics[{Green, PointSize[Large], Point[{u2, w2}]}];

In[ ]:= cercalb = ParametricPlot[{1, 0} + 3 {Cos[t], Sin[t]}, {t, 0, 2 Pi}, PlotStyle -> White];

In[ ]:= cerc0 = ParametricPlot[ $\sqrt{x0^2 + y0^2}$  {Cos[t], Sin[t]}, {t, 0, 2 Pi}, PlotStyle -> Yellow];
        cerc1 = ParametricPlot[ $\sqrt{x1^2 + y1^2}$  {Cos[t], Sin[t]}, {t, 0, 2 Pi}, PlotStyle -> Yellow];
        cerc2 = ParametricPlot[ $\sqrt{x2^2 + y2^2}$  {Cos[t], Sin[t]}, {t, 0, 2 Pi}, PlotStyle -> Yellow];

In[ ]:= Show[cerc2, cerc1, cerc0, c1, PA, PB, PC, c2, PA, PB, PC]

```

