Trochoida - pohyb hřebíku na kole

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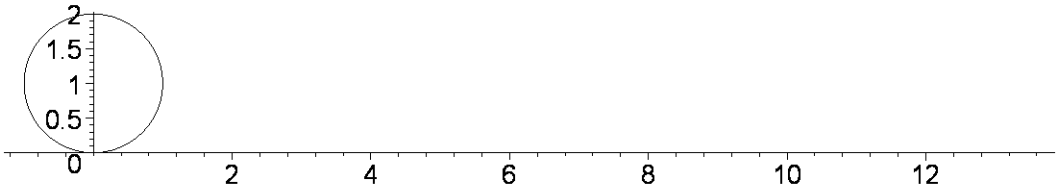
>
>
> with(plots):
>
> b:=1:
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```

Trochoida pro b=1.

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>
> b:=0.5:
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> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```

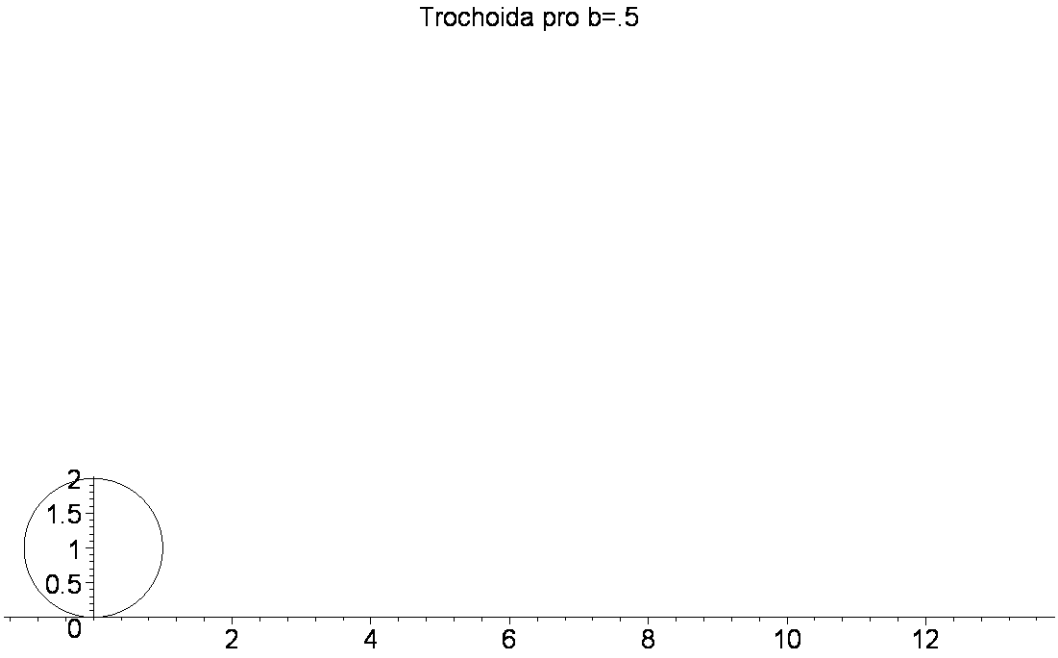


```
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>
>
> b:=0.2:
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```
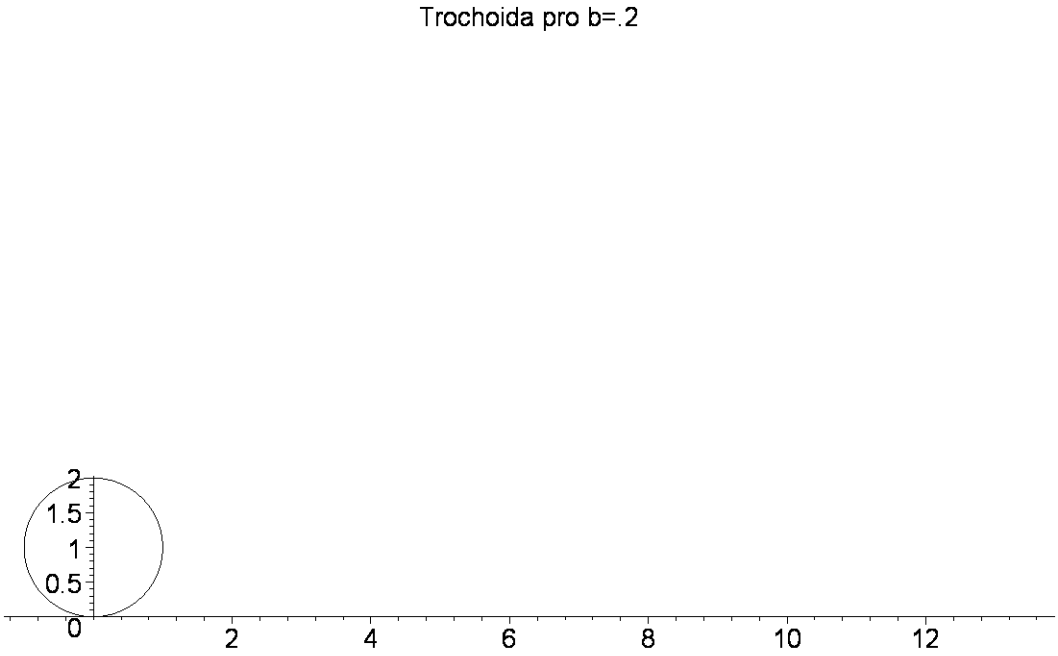
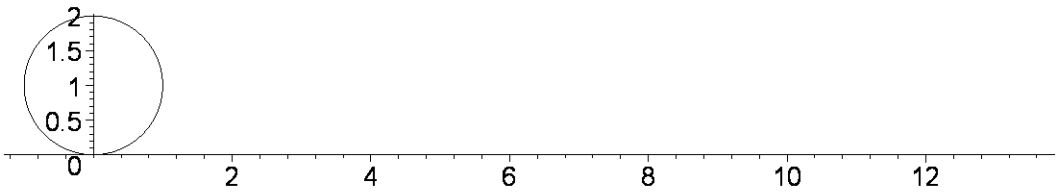



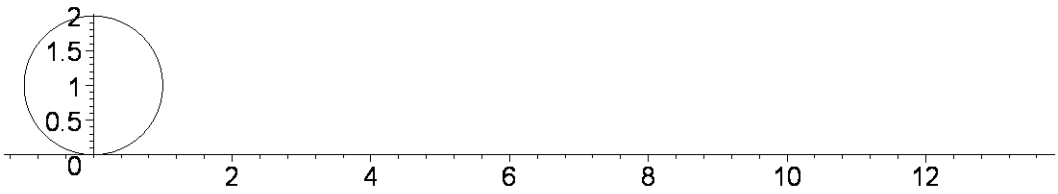

```
> 
> 
> 
> b:=0:
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```

Trochoida pro b=0.




```
> 
> 
> b:=-1:
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```

Trochoida pro b=-1.




```
> b:=2:
>
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>
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```
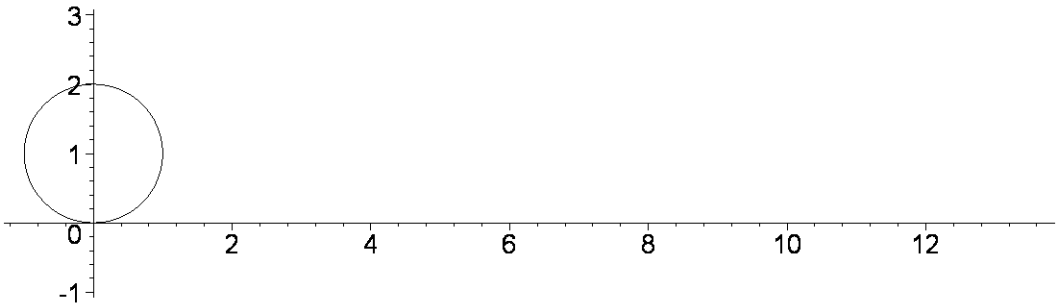
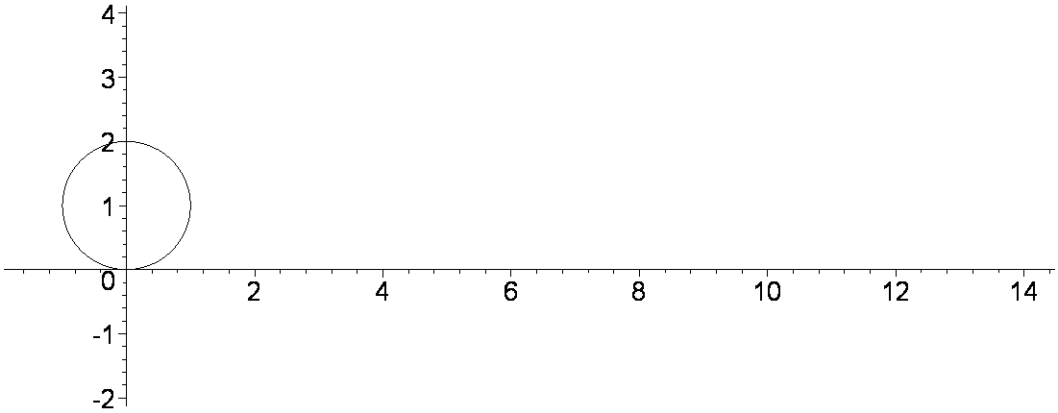

Trochoida pro b=2.




```
> 
> 
> b:=3:
> fra:=50:rang:=0..4*Pi:
> A1:=animate([x-sin(t),1-cos(t),t=0..2*Pi],x=rang,frames=fra,colo
  r=BLACK,title=cat(`Trochoida pro b=`,convert(evalf(b),name))):
> A2:=animate([t*x-b*sin(t*x),1-b*cos(t*x),t=0..1],x=rang,frames=f
  ra,color=RED):
> A3:=animate([t*x+(1-t)*(x-sin(x)),t+(1-t)*(1-cos(x)),t=1-b..1],x
  =0..4*Pi,frames=fra,color=BLUE):
> D1:=display({A2,A3}):display({A1,D1},scaling=constrained);
```

Trochoida pro b=3.



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