

```

> # with(DEtools, odeadvisor);
des := {diff(phi(t), t) = tan(0.01*t*sin(0.01*t))/l, diff(x(t),
t) = V*cos(phi(t)), diff(y(t), t) = V*sin(phi(t))};
> # odeadvisor(des);
desSol := dsolve(des, parameters = [V, l], [hypergeometricsols]);
#hypergeomsols
> desSol(parameters = [109, 5]);
> desSol(99);
> with(plots);
> odeplot(desSol, [[t, x(t)], [t, y(t)], [t, phi(t)]], 0 .. 300,
labels = ["t", "Trajectory"], legend = ["x(t) - Position in x",
"y(t) - Position in y", "phi(t) - Heading Angle"]);
> odeplot(desSol, [t, x(t), y(t)], 0 .. 300);
> odeplot(desSol, [x(t), y(t), phi(t)], 0 .. 150, labels = ["x -
Position", "y - Position", "phi - Heading Angle"]);
des := { \frac{d}{dt} \phi(t) = \frac{\tan(0.01 t \sin(0.01 t))}{l}, \frac{d}{dt} x(t) = V \cos(\phi(t)), \frac{d}{dt} y(t) = V \sin(\phi(t)) }

```

Warning: None of the functions indicated in the given ranking were found in the given DE system. Assuming the following as the solving functions: [x(t), y(t), phi(t)]
Warning: System is inconsistent

desSol := ()

[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot, display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, implicitplot, implicitplot3d, inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions, setoptions3d, shadebetween, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d, tubeplot]

Error, (in plots/odeplot) input is not a valid dsolve/numeric solution

Error, (in plots/odeplot) input is not a valid dsolve/numeric solution

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> 1 + 1

2

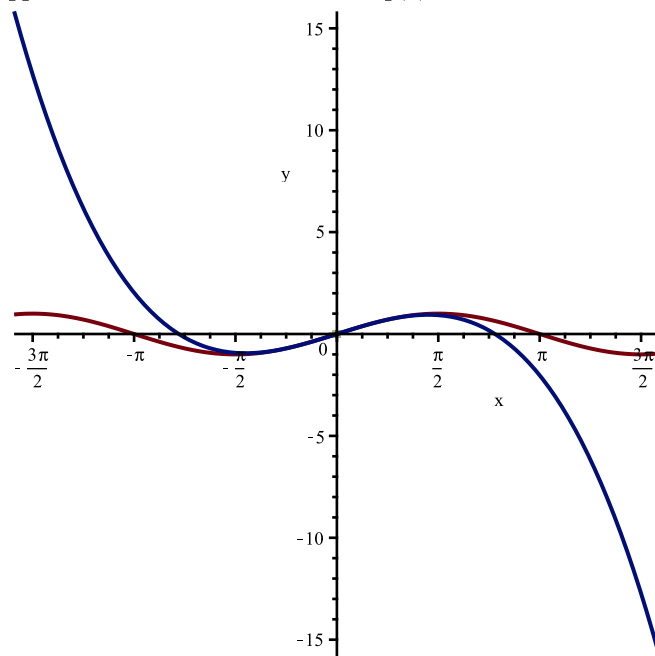
(1)

> eval(des, t = 10);

$$\left\{ \begin{array}{l} \delta(10) = 0.009983341665, \delta(t0) = \delta 0, \left(\frac{d}{dt} \phi(t) \right) \Big|_{\{t=10\}} = \frac{\tan(\delta(10))}{l}, \left(\frac{d}{dt} x(t) \right) \Big|_{\{t=10\}} = V \cos(\phi(10)), \left(\frac{d}{dt} y(t) \right) \Big|_{\{t=10\}} = V \sin(\phi(10)), \phi(t0) = \phi 0, x(t0) = x0, \end{array} \right. \quad (2)$$

$$y(t_0) = y_0$$

> Student[Calculus1][TaylorApproximationTutor]();



> singularities(desSol);

singularities(desSol)

(3)

> $6 \cdot x^3$

$6x^3$

(4)

> $\text{diff}(6 \cdot x^3, x)$

$18x^2$

(5)

> $\text{diff}(\text{diff}(6 \cdot x^3, x), x)$

$36x$

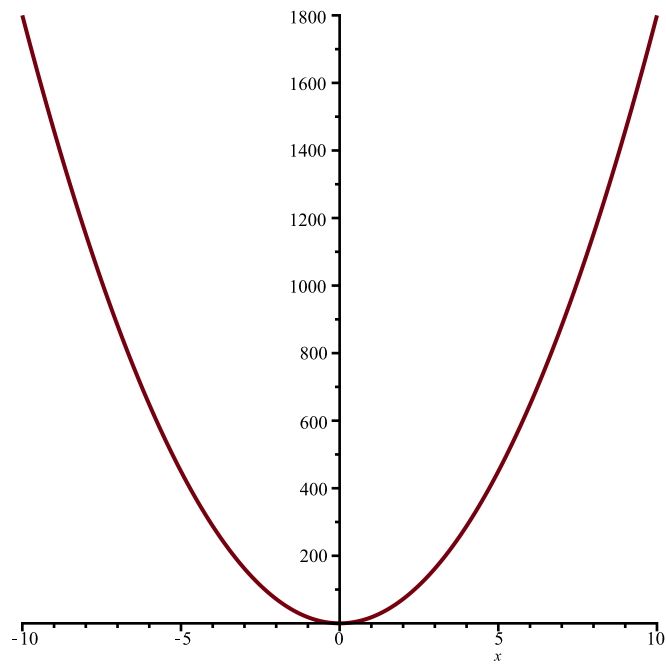
(6)

> $\text{solve}(\text{(5)} = 0, x)$

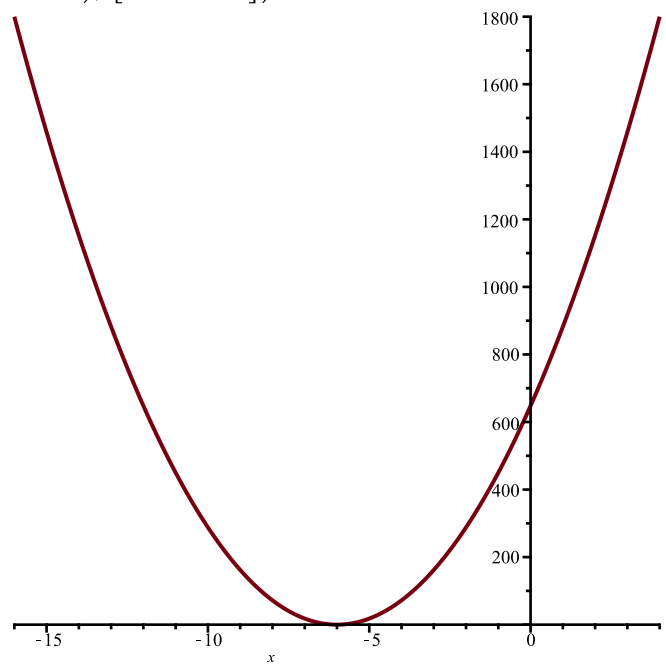
$0, 0$

(7)

> $\text{smartplot}(\text{(5)})$



```
> eval( smartplot(18*x^2), [x=x + 6])
```



```
> 2 + 2
```

4

(8)

```
> issqr((8))
```

true

(9)

```
> Chargement DynamicSystems;
Linearize(des, delta, phi, [0, 0, 0]);
# ZeroPolePlot();
```

Chargement

Linearize($\left\{ \delta(t) = 0.01 t \sin(0.01 t), \delta(t0) = \delta, \frac{d}{dt} \phi(t) = \frac{\tan(\delta(t))}{l}, \frac{d}{dt} x(t) \right.$

(10)

$$\left[= V \cos(\phi(t)), \frac{d}{dt} y(t) = V \sin(\phi(t)), \phi(t_0) = \phi_0, x(t_0) = x_0, y(t_0) = y_0 \right], \delta, \phi, [0, 0, 0]$$

Ici je revois la stabilité de l'équation ordinaire différentielle du modèle odométrique.

Error, unable to parse

Ici je revois la stabilité de l'équation ordinaire différentielle du modèle odométrique.

...