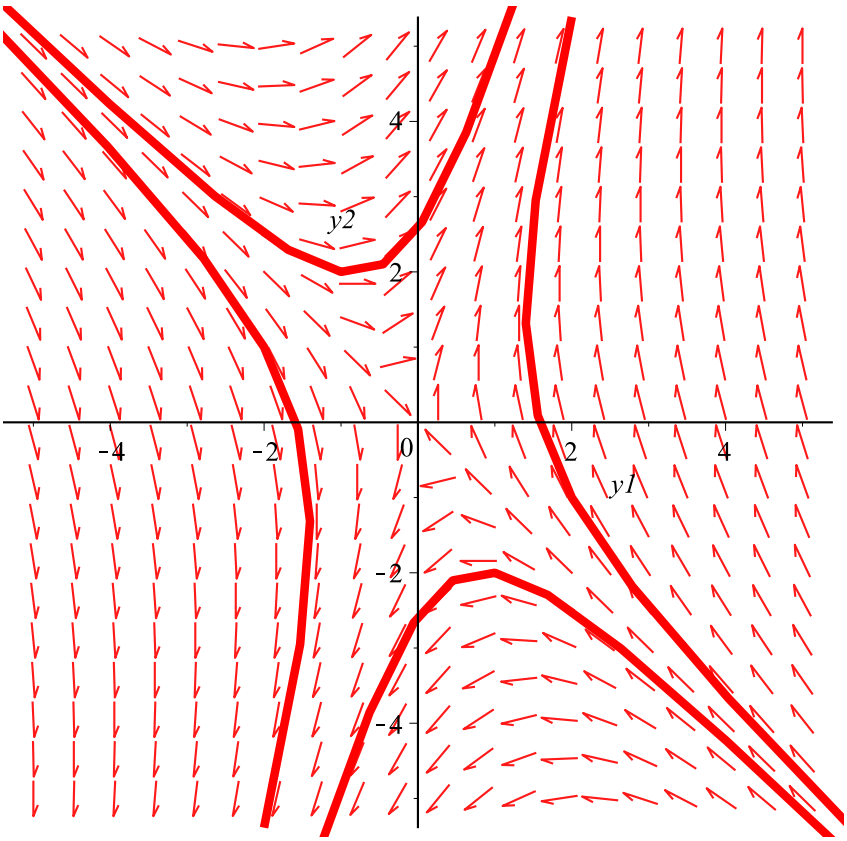
>

$$ds := \frac{d}{dx} y1(x) = -2\,y1(x) + 2\,y2(x),\ \frac{d}{dx} y2(x) = 7\,y1(x) + 3\,y2(x)$$

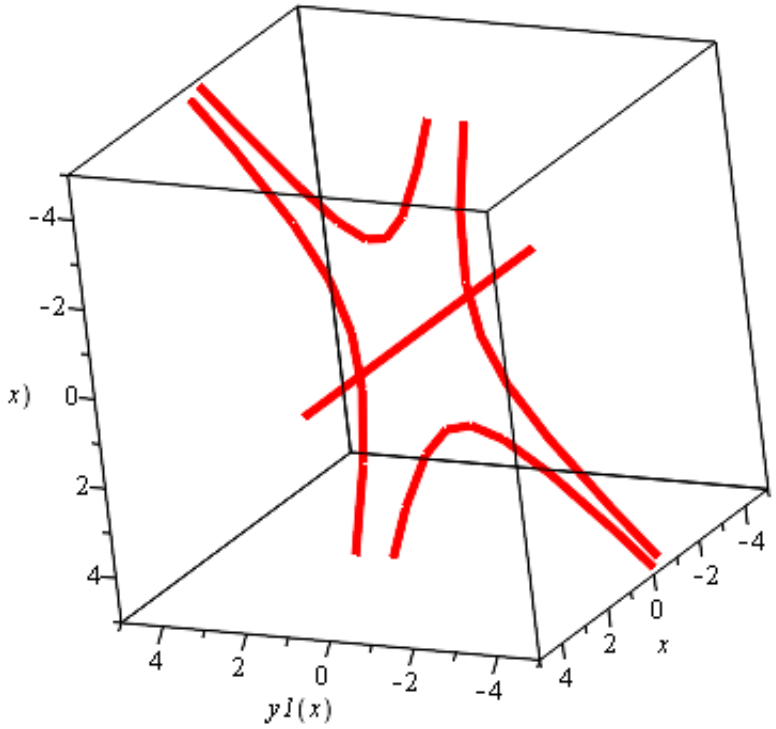
" "

$$\left\{y1(x) = \_C1\,e^{-4x} + \_C2\,e^{5x},\ y2(x) = -\_C1\,e^{-4x} + \frac{7}{2}\,\_C2\,e^{5x}\right\}$$

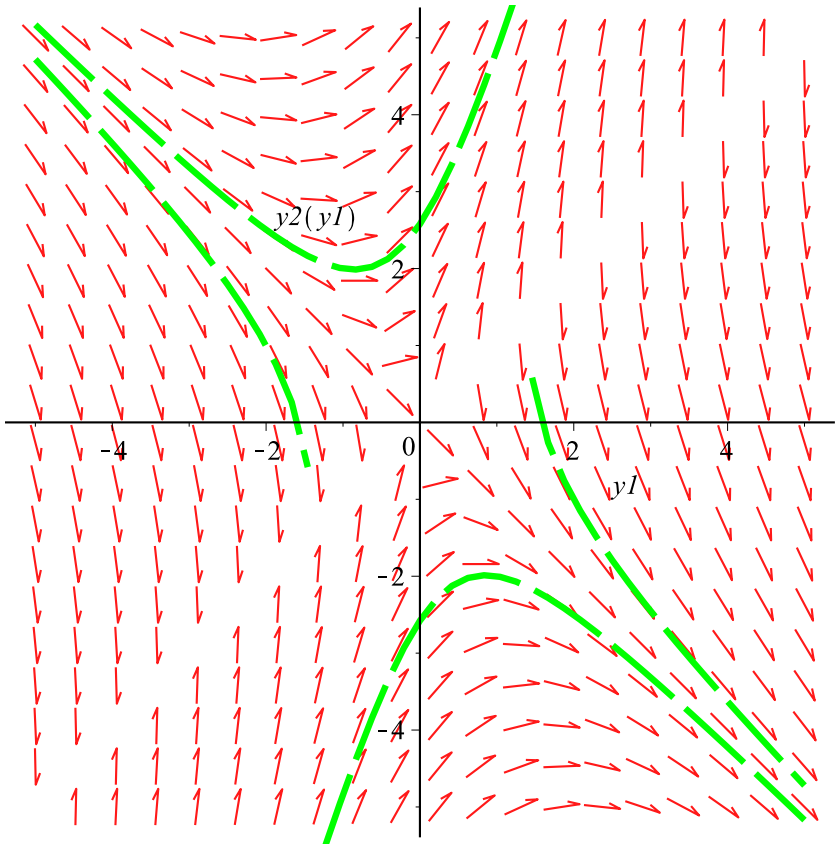
" "



" 3 D "


-4
-2
x)
0
2
4
4
2
0
-2
-4
y1(x)
4
2
0
-2
-4
x

" "



" 2 "

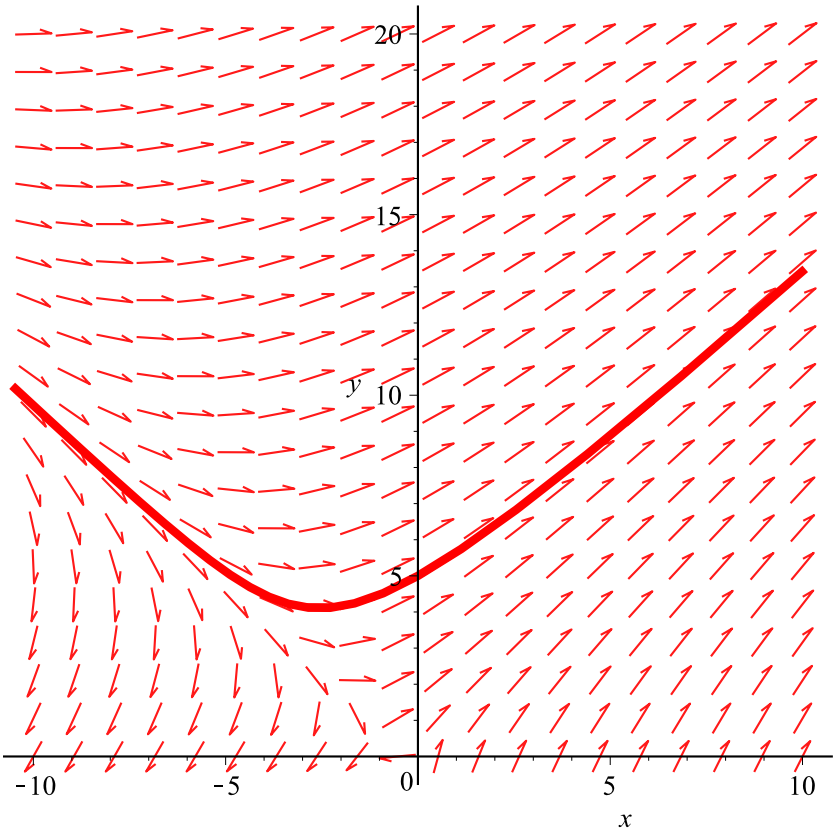
$$\frac{d}{dx}\,y1(x) = 5\,y1(x) + 3\,y2(x),\ \frac{d}{dx}\,y2(x) = 4\,y1(x) + 9\,y2(x)$$

$$\left\{y1(x) = \_C1\,e^{3x} + \_C2\,e^{11x},\ y2(x) = -\frac{2}{3}\,\_C1\,e^{3x} + 2\,\_C2\,e^{11x}\right\} \quad \textbf{(1)}$$

" 3 "

$$\frac{d}{dt}\,x(t) = x(t) + 2\,y(t),\ \frac{d}{dt}\,y(t) = 2\,x(t) + y(t) + 1$$

$$\left\{x(t) = e^{3t}\,\_C2 + e^{-t}\,\_C1 - \frac{2}{3},\ y(t) = e^{3t}\,\_C2 - e^{-t}\,\_C1 + \frac{1}{3}\right\}$$


20
15
10
5
y
-10
-5
0
5
10
x