

> restart :

SISTEMA DE DOS RESORTES UNIDOS ENTRE SÍ

>  $M_1 := 2; M_2 := 1; H_1 := 1; H_2 := 2;$

$$M_1 := 2$$

$$M_2 := 1$$

$$H_1 := 1$$

$$H_2 := 2$$

(1)

>  $Sistema := M_1 \cdot diff(x_1(t), t\$2) = -H_1 \cdot x_1(t) + H_2 \cdot (x_2(t) - x_1(t)), M_2 \cdot diff(x_2(t), t\$2) = -H_2$   
 $\cdot (x_2(t) - x_1(t)) : Sistema_1; Sistema_2;$

$$2 \left( \frac{d^2}{dt^2} x_1(t) \right) = -3 x_1(t) + 2 x_2(t)$$

$$\frac{d^2}{dt^2} x_2(t) = -2 x_2(t) + 2 x_1(t)$$

(2)

>  $CondicionesIniciales := x_2(0) = \frac{1}{10}, x_1(0) = \frac{1}{20}, D(x_1)(0) = 0, D(x_2)(0) = 0;$

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(3)

>  $Solucion := dsolve(\{Sistema, CondicionesIniciales\}) : evalf(\%, 2);$

$$\{x_1(t) = 0.062 \cos(-0.60 t) - 0.012 \cos(1.8 t), x_2(t) = 0.072 \cos(-0.60 t) + 0.020 \cos(1.8 t)\}$$

(4)

>  $plot([rhs(Solucion_1), rhs(Solucion_2)], t = 0 .. 50);$

