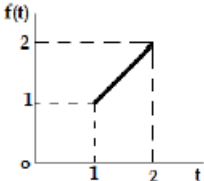
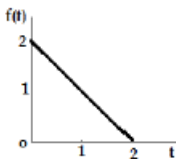
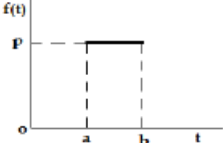
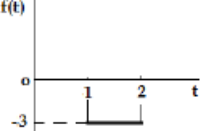


	() Prova (x) Exercícios () Prova Modular () Prática de Laboratório () Exame Final/Exame de Certificação () Aproveitamento Extraordinário de Estudos () Prova Semestral () Segunda Chamada () Prova de Recuperação	Nota:
Disciplina: <i>Cálculo IV</i>	Turma:	
Professor: <i>Milton, Pericles e Rebello</i>	Data: <i>out / 2013</i>	
Aluno (a):		

LISTA 7 de Cálculo IV
Exercícios: EDOs de por Transformadas de Laplace

a) Determine $\mathcal{L}\{f(t)\}$: Use a definição

1. $f(t) = \begin{cases} -1, & 0 \leq t < 1 \\ 1, & t \geq 1 \end{cases}$	2. $f(t) = \begin{cases} 4, & 0 \leq t < 2 \\ 0, & t \geq 2 \end{cases}$
3. $f(t) = \begin{cases} 2t+1, & 0 \leq t < 1 \\ 0, & t \geq 1 \end{cases}$	4. $f(t) = \begin{cases} 0, & 0 \leq t < \frac{\pi}{2} \\ \cos t, & t \geq \frac{\pi}{2} \end{cases}$
5. 	6. 
7. 	8. 
9. $f(t) = e^{-2t-5}$	10. $f(t) = e^{-t} \cdot \sin t$

b) Determine $\mathcal{L}^{-1}\{F(s)\}$: Use a tabela

1. $F(s) = \frac{1}{s^3}$	2. $F(s) = \frac{1}{s^2} - \frac{48}{s^5}$
3. $F(s) = \frac{5}{s^2 + 49}$	4. $F(s) = \frac{2s-6}{s^2+9}$
5. $F(s) = \frac{1}{s^2 + s - 20}$	6. $F(s) = \frac{s-3}{(s-\sqrt{3})(s+\sqrt{3})}$
7. $F(s) = \frac{0,9s}{(s-0,1).(s+0,2)}$	8. $F(s) = \frac{6s^2+3}{s(s-1).(s+1).(s-2)}$
9. $F(s) = \frac{s}{(s+2).(s^2+4)}$	10. $F(s) = \frac{54}{s^4-81}$

c) Resolva as equações diferenciais usando transformada de Laplace:

1. $\frac{dy}{dt} - y = 1$, $y(0) = 0$

2. $y' + 6y = e^{4t}$, $y(0) = 2$

3. $\frac{dy}{dt} - y = 2 \cos 5t$, $y(0) = 0$

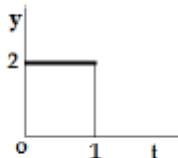
4. $y'' + 5y' + 4y = 0$, $y(0) = 1$ e $y'(0) = 0$

5. $\frac{d^2y}{dt^2} + 9y = e^t$, $y(0) = 1$ e $\frac{dy}{dt}(0) = 0$

6. $y'' - y' = \cos t$, $y(0) = 1$ e $y'(0) = -1$

7. $y'' + y = \sqrt{2} \operatorname{sen} \sqrt{2}t$, $y(0) = 10$ e $y'(0) = 0$

8. $y''' - 4y = 12e^{-t}$, $y(0) = 0$, $y'(0) = 0$ e $y''(0) = 0$

9. $y' + y =$ 

10. $2y' - 4y =$ 