Mentimeter

Find the solution $x(t)$ to $\dfrac{d^2x}{dt^2} + 3\dfrac{dx}{dt} + 2x = 0$,

with initial conditions: $x(0) = 1, x'(0) = 0$.

(a)	(b)	(c)
$2e^{-t} + e^{-2t}$	$2e^{-t} - e^{-2t}$	$2e^{t} - e^{2t}$
0	0	0

Find the solution $x(t)$ to $\frac{d^2x}{dt^2} + 2\frac{dx}{dt} + 2x = 0$,

with initial conditions: $x(0) = 1, x'(0) = 0$.

0	0	0
$\frac{2}{\sqrt{2}}e^{-t}\cos(t-\frac{\pi}{4})$	$\frac{2}{\sqrt{2}}e^{-t}\sin(t)$	$\frac{2}{\sqrt{2}}e^{-t}\sin(t-\frac{\pi}{4})$
(a)	(b)	(c)

Mentimeter

3. Compute the Laplace Transform of $y(t) = e^{-\alpha t}\sin(\beta t)1(t)$

(a)	(b)	(c)	(d)
0	0	0	0
$\frac{\beta}{s^2 + 2\alpha s + \beta^2}$	$\frac{\beta}{s^2 + 2\alpha s + \alpha^2 + \beta^2}$	$\frac{\beta}{s^2 + \alpha s + \alpha^2 + \beta^2}$	$\frac{\beta}{(s+\alpha+j\beta)(s+\alpha-j\beta)}$

Mentimeter

6. Compute the inverse Laplace Transform of $\dfrac{3s+4}{s^2+3s+2}$.