**Analisi Matematica II - C.d.L. Civile**

**Alcune soluzioni degli esercizi proposti il 24 Maggio 2002**
ATTENZIONE: potrebbero esserci errori, segnalateli!

1. a. $-\frac{1}{3}\sin(3t)$
2. a. $x(0)\cos(3t)+\left(\frac{\dot{x}(0)}{3}-\frac{1}{6}\right)\sin(3t)+\frac{\sqrt{2}}{2}t\,\cos(3t-\pi/4)$
3. c. $\frac{9}{8}x^{3/2}-1/8x^{-5/2}$
4. b. $c_1\sin(x)+c_2\cos(x)+2\cos(x)\ln\left(\frac{1+\sin(x)}{\cos(x)}\right)$
   c. $-5\sin(x)+2\cos(x)\ln\left(\frac{1+\sin(x)}{\cos(x)}\right)$
5. a. $c_1e^{-3/2x}\sin\left(1/2\sqrt{3}x\right)+c_2e^{-3/2x}\cos\left(1/2\sqrt{3}x\right)$
   b. $2\sqrt{3}e^{-3/2x}\sin\left(1/2\sqrt{3}x\right)$
6. b. $c_1e^{(\sqrt{3}-2)x}+c_2e^{-(2+\sqrt{3})x}-\frac{3}{52}\cos(3x)-1/26\sin(3x)$ c. $e^{(\sqrt{3}-2)x}\left(\frac{7}{13}\sqrt{3}+\frac{3}{104}\right)+e^{-(2+\sqrt{3})x}\left(-\frac{7}{13}\sqrt{3}+\frac{3}{104}\right)-\frac{3}{52}\cos(3x)-1/26\sin(3x)$
7. a. $1/2\sqrt{3}e^{(\sqrt{3}-2)x}-1/2\sqrt{3}e^{-(2+\sqrt{3})x}$
8. a. $4/3e^{-1/2x}\sin\left(1/2\sqrt{3}t\right)\sqrt{3}$