

2012 Teste de auto-avaliação (3) - soluções

10. (a) $y_g(x) = Ae^{-4x} + Be^{-x} + 6$, $A, B \in \mathbb{R}$;
 (b) $y_g(x) = Ae^{-2x} + Bxe^{-2x} + 6$, $A, B \in \mathbb{R}$;
 (c) $y_g(x) = e^{-\frac{\sqrt{7}}{2}x}(A \sin(\frac{3}{2}x) + B \cos(\frac{3}{2}x)) + 6$, $A, B \in \mathbb{R}$;
11. $y_g(x) = Ae^{-8x} + Be^{-2x} + 2e^{4x}$, $A, B \in \mathbb{R}$;
 (a) $y(x) = 2e^{4x}$ (A=B=0)
 (b) $y(x) = -e^{-8x} + e^{-2x} + 2e^{4x}$ (A=-1, B=1);
12. (a) $y(x) = 6 + 4e^{-\frac{x^2}{2}}$;
 (b) $-y^{-1} + \frac{y^2}{2} = -\frac{1}{3}e^{-x^3} - \frac{1}{6}$;
13. (a) $\frac{2^5}{3}$
 (b) $2\left(\frac{3^4}{2} - \frac{3^5}{10}\right)$;
14. (a) $\frac{8}{3}$;
 (b) $\frac{7}{3}$