

RISPOSTE 080301 (Soluzioni: seconda parte)

$$(vii) \quad y_e(t) = \frac{3}{2}e^{-t} - \frac{1}{2}e^{-3t}; \quad y_f(t) = \frac{10}{3} + \frac{5}{3}e^{-3t} - 5e^{-t};$$
$$y(t) = \frac{10}{3} - \frac{7}{2}e^{-t} + \frac{7}{6}e^{-3t}$$

$$(viii) \quad y_e(t) = 0$$
$$y_f(t) = y(t) = \frac{35}{216}e^{-3t} - \frac{5}{4}e^{-t} + \frac{1}{3}t^2 - \frac{8}{9}t + \frac{26}{27} + \frac{1}{8}e^t;$$

$$(ix) \quad y_e(t) = 0$$
$$y_f(t) = y(t) = \frac{5}{2} - 15te^{-2t} - \frac{5}{2}e^{-2t};$$

$$(xi) \quad y_e(t) = 0, \quad y_f(t) = y(t) = \frac{1}{2}(t - 1 + e^t \cos(t));$$

$$(xiii) \quad y_e(t) = \cos(\sqrt{2}\sqrt{2}t) - \sqrt{2}\sin(\sqrt{2}\sqrt{2}t),$$
$$y_f(t) = \frac{4+\sqrt{2}}{28}\cos(\sqrt{2}\sqrt{2}t) - \frac{4+\sqrt{2}}{28}\cos(2\sqrt{2}t),$$

$$(xv) \quad y_e(t) = -\frac{1}{4}(e^{\sqrt{3}t} + e^{-\sqrt{3}t}) + \frac{3}{4}(e^t + e^{-t}),$$
$$y_f(t) = \frac{1}{3} - \frac{1}{4}(e^t + e^{-t}) + \frac{1}{12}(e^{\sqrt{3}t} + e^{-\sqrt{3}t}),$$
$$y(t) = \frac{1}{3} - \frac{1}{6}(e^{\sqrt{3}t} + e^{-\sqrt{3}t}) + \frac{1}{2}(e^t + e^{-t})$$