

Bon courage

Barème

Exercice 1 : $\frac{8}{1!} \cdot 03pts$
 $\frac{8}{2!} \cdot 03pts$

Exercice 2 : $\int_0^{\frac{\pi}{2}} \frac{1-x}{x^2} e^x dx$! 03 pts
 $\int_0^{\frac{\pi}{2}} \frac{\sin x + \sin 2x}{1 + \cos^2 x} dx$! 03 pts

Exercice 3 : $\frac{8}{\sqrt{2}}$

Solution .2 On pose

$$y_p^{(0)} + 2y_p^{(0)} + 4y_p = xe^x, \quad 2ae^x + (ax + b)e^x + 2ae^x + 2(ax + b)e^x + 4(ax + b)e^x = xe^x$$

$$, \quad (7ax + 4a + 7b)e^x = xe^x:$$

On trouve $a = \frac{1}{7}$ et $b = \frac{4}{7}$.

$$a = \frac{1}{7} \text{ et } b = \frac{4}{7}$$