$$B = \int_0^1 \frac{x}{\sqrt{x^2+1}}\,dx = \int_0^1 x(x^2+1)^{-1/2}\,dx = \Big[(x^2+1)^{1/2}\Big]_0^1 = \sqrt{2}-1$$

$$A = \int_0^{\pi/4} \cos^2\theta \,\sin\theta \,d\theta$$ poser $u = \cos\theta \Rightarrow du = -\sin\theta\,d\theta$

ce qui donne $A = -\int_{\cos 0 = 1}^{\cos \pi/4 = \frac{\sqrt{2}}{2}} u^2\,du = \Big[\frac{u^3}{3}\Big]_{\sqrt{2}/2}^{1} = \frac{4-\sqrt{2}}{12}$

$$C = \int_0^1 x^3 e^{x^2}\,dx$$ poser $u = x^2 \Rightarrow du = 2x\,dx$

ce qui donne $C = \frac{1}{2}\int_{0^2}^{1^2} u e^u\,du = \frac{1}{2}\int_0^1 u e^u\,du$ + intégr par parties

$a = u \qquad da = du$

$b = e^u \qquad db = e^u\,du$

et finalement $C = \frac{1}{2}\left\{\Big[u e^u\Big]_0^1 - \int_0^1 e^u\,du\right\} = \frac{1}{2}\left\{\Big[u e^u\Big]_0^1 - \Big[e^u\Big]_0^1\right\} = 1/2$