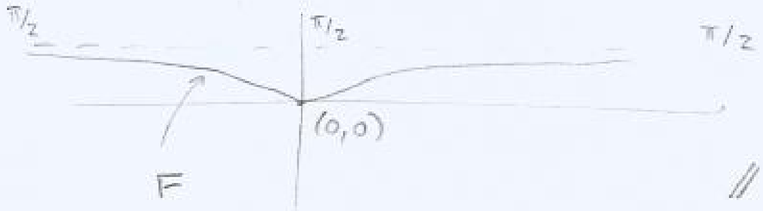
Pseudo pauta trabajo dirigido C2/2.

P1 (a) TFC $\rightarrow$ $F' = 2xe^{-x^4}$, $F'' = 2e^{-x^4}(1-4x^4)$ //

(b)



//

P2 Usar TFC y CV. La integral es 2. //

P3 Derivar (TFC) $\longrightarrow$ $f(x) = \frac{1}{2}x^2 + cte$. Reemplazar de vuelta

$\Rightarrow \quad = \frac{1}{2}x^2 + 1$ //

P4 TFC $\Rightarrow$ $f(x) = \sin x$ //

P5 TFC $\Rightarrow$ $f(x) = g(2) - g(x)$. Reemplazando y por partes

$$\int_0^2 x f(x)\,dx = \frac{1}{2}x^2(g(2)-g(x))\Big|_0^2 + \int_0^2 \frac{\frac{1}{2}x^2}{\sqrt{1+x^3}}\,dx = \frac{2}{3}.$$ //

P6 $\int \frac{\cos\theta}{1+\cos\theta}\,d\theta = \theta - \tan\frac{\theta}{2} + cte$ //, $\int_0^1 x \arctan x = \frac{1}{4}(\pi - 2)$ //

$$\int_{\pi/6}^{\pi/3} \frac{\cot\theta \sec^2\theta}{1+\cot\theta}\,d\theta = \ln|1+\tan\theta|\Big|_{\pi/6}^{\pi/3} = \ln\left(\frac{1+\sqrt{3}}{1+\frac{1}{\sqrt{3}}}\right) = \frac{\ln 3}{2}$$ //

P8 $= \int_0^1 \ln(1+x) = 2\ln 2 - 1$ (**P7** era $I_n = \int \frac{x^n}{(1+x)^{1/2}}\,dx$)

P9 $= \sum_{k=1}^{n} \frac{1}{n+k} \Rightarrow \int_0^1 \frac{1}{1+x}\,dx = \ln 2$. //