MINI EXAMEN 1

① $\int x^1 \operatorname{Sen}(6x^2+3)\,dx = \int x \operatorname{sen}(u)\left(\frac{1}{12x}\,du\right) = \int \frac{1}{12}\operatorname{sen} u\,du$

$u = 6x^2+3$

$du = 12x\,dx$

$dx = \frac{1}{12x}\,du$

$= \frac{1}{12}\int \operatorname{Sen} u\,du = \frac{1}{12} - \cos u = \underline{-\frac{1}{12}\cos(6x^2+3)+C}$

② $\int \left(\frac{7x^3+5x^4+9x^6}{3x^7}\right)^{dx} = \frac{1}{3}\left[\int\left(\frac{x^2(7x+5x^2+9x^4}{3x^7}\right)dx = \frac{1}{3}\left[\int\frac{7x+5x^2+9x^4}{x^5}\right.\right.$

$= \frac{1}{3}\int\frac{7x}{x^5}\,dx + \frac{1}{3}\int\frac{5x^2}{x^5}\,dx + \frac{1}{3}\int\frac{9x^4}{x^5}\,dx$

$= \frac{1}{3}\left[\frac{7}{1}\int x^{-4}\,dx + \frac{5}{1}\int x^{-3}_{dx} + \frac{9}{1}\int x^{-1}\,dx\right]$

$= \frac{1}{3}\left[7\frac{x^{-3}}{-3} + 5\frac{x^{-2}}{-2} + 9\int\frac{1}{x}\,dx\right]$

$= \underline{\frac{1}{3}\left[-\frac{7}{3x^3} - \frac{5}{2x^2} + 9\ln|x|\right]+C}$