

$$1) a) \int (2x - 3\sec(2x) - \frac{3}{5x} + 4\cos(5x) + 1) dx$$

$$\frac{2x^2}{2} + \frac{3}{2} \cos(2x) - \frac{3 \ln x}{5} + \frac{4}{5} \sec(5x) + x + C$$

$$b) \int_0^2 (2x^2 - x^3 - x) dx$$

$$\frac{2x^3}{3} - \frac{x^4}{4} - \frac{x^2}{2}$$

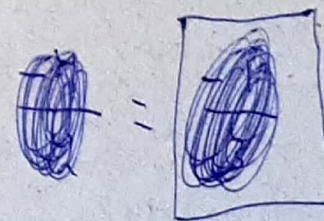
$$\frac{2 \cdot 2^3}{3} - \frac{2^4}{4} - \frac{2^2}{2}$$

$$\frac{2 \cdot 8}{3} - \frac{16}{4} - \frac{4}{2}$$

$$\frac{16}{3} - \frac{16}{4} - \frac{4}{2} - \left(\frac{0}{3} - \frac{0}{4} - \frac{0}{2} \right)$$

$$\frac{16}{3} - \frac{16}{4} - \frac{4}{2}$$

$$\frac{64 - 48 - 24}{12} =$$



$$\frac{-8}{12}$$

2)

X_i	-1	0	1
	2	-1	3

$X_0 = -1$
 $X_1 = 0$
 $X_2 = 1$

f_0

$$\frac{(X-X_1)(X-X_2)}{(X_0-X_1)(X_0-X_2)}$$

$$\frac{\overbrace{(X)} \overbrace{(X-1)}}{(-1)(-2)}$$

$$\boxed{\frac{X^2 - X}{2}}$$

f_1

$$\frac{(X-X_0)(X-X_2)}{(X_1-X_0)(X_1-X_2)}$$

$$\frac{\overbrace{(X+1)} \overbrace{(X-1)}}{(0+1)(-1)}$$

$$\begin{array}{r} X^2 - X - 1 \\ \hline -1 \end{array}$$

f_2

$$\frac{(X-X_0)(X-X_1)}{(X_2-X_0)(X_2-X_1)}$$

$$\frac{(X+1)(X)}{(1)(1)}$$

$$\boxed{\frac{X^2 + X}{2}}$$

$$\cancel{\left(\frac{X^2 - X}{2}\right)} + \cancel{\left(\frac{X^2 - 1}{-1}\right)} + 3\left(\frac{X^2 + X}{2}\right)$$

$$X^2 - X + X^2 - 1 + \frac{3X^2 + 3X}{2}$$

$$\frac{\cancel{1}X^2 - 2X + \cancel{2}X^2 - 2 + \cancel{3}X^2 + 3X}{2}$$

$$\boxed{\frac{7X^2 + X - 2}{2}}$$

3) No WOLFRAM ENCONTREI

GRAFICAMENTE INTERVALO ENTRE

0 e 1. ~~1~~

ACHEI INTERVALO COM AMPLITUDE 0.1

ENTRE 0.5 e 0.6

$$I = [0.5; 0.6]$$

$$f(x) = 3\sin(x) - \frac{1}{x}$$

$$f'(x) = 3\cos(x) + \frac{1}{x^2}$$

!TENANDO NA CALCULADORA!

$$x_0 = 0.5500$$

$$x_1 = 0.5926$$

$$x_2 = 0.5948$$

$$x_3 = 0.5948$$

$$x_4 = 0.5948$$

REPETIU AS 4 CASAS

RESPOSTA = 0.5948

4) $\int_0^{0.6} \frac{x}{(3+x)^2} dx$ 6 pontos

$$h = \frac{0.6}{5} = 0.12$$

	x_0	x_1	x_2	x_3	x_4	x_5
	0	0.12	0.24	0.36	0.48	0.6
$f(x)$	0	0.04	0.022	0.031	0.039	0.046

$$E = 0 + 0.046 = 0.046$$

$$P = 0.022 + 0.039 = 0.061$$

$$I = 0.04 + 0.031 = 0.071$$

$$0.12(0.023 + 0.061 + 0.043)$$

$$0.0152$$