Ejercicio 1

$$P_2(x) = 2\frac{(x-1)(x-4)(x-6)}{(-1)(-4)(-6)} + 3\frac{(x)(x-4)(x-6)}{(-3)(-5)} + 18\frac{(x)(x-1)(x-6)}{(4)(3)(-2)} + 38\frac{x(x-1)(x-4)}{6(5)(2)}$$

$$= \frac{2(x^3-11x^2+34x-24)}{-24} + \frac{3(x^3-10x^2+24x}{15}$$

$$+ \frac{18(x^3-7x^2+6x)}{-24} + \frac{38(x^3-5x^2+4x)}{60}$$

$$= \left(\frac{11}{12}x^2 - 2x^2 + \frac{21}{4}x^2 - \frac{19}{6}x^2\right)$$

$$+\left(-\frac{11}{12}x^3 + \frac{1}{5}x^3 - \frac{3}{4}x^3 + \frac{19}{30}x^3\right)$$

$$+\left(-\frac{17}{6}x + \frac{24}{5}x - \frac{9}{2}x + \frac{38}{15}x\right) + 2$$

$$= x^2 + 2$$

con $x = 2 \longrightarrow y = 2^2 + 2 = 4 + 2$

$$= 6$$

Ejercicio 2

$$P_1(x) = -0.47\left(\frac{x-\pi}{2.3-\pi}\right) + \frac{\pi(x-2.3)}{(\pi-2.3)}$$

$$= \frac{-0.47x + \pi \cdot 0.47}{-0.841} + \frac{\pi x - 2.3\cdot\pi}{0.841}$$

$$= 4.31x - 10.34$$

Resolvemos

$$0 = 4.31x - 10.34$$

$$4.31x = 10.34$$

$$x = \frac{10.34}{4.31} \approx 2.4$$

Entonces

una aproximación de la raíz no nula de $f(x) = x - 4\operatorname{sen} x$ es

$$\boxed{x \approx 2.4}$$