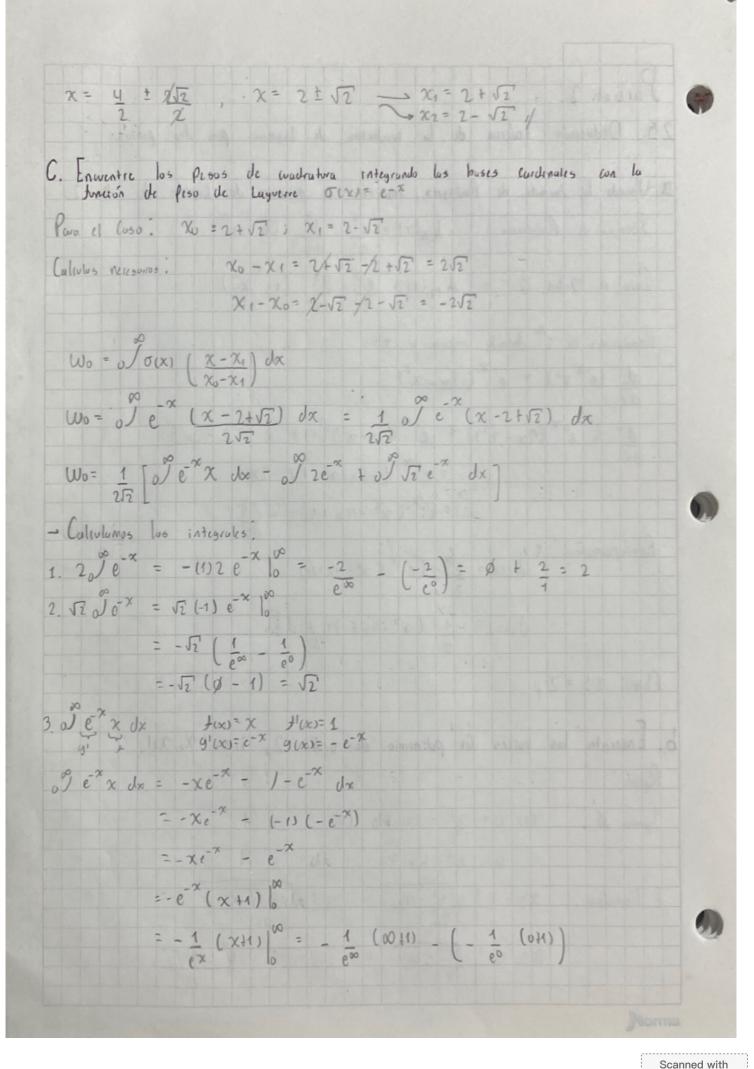
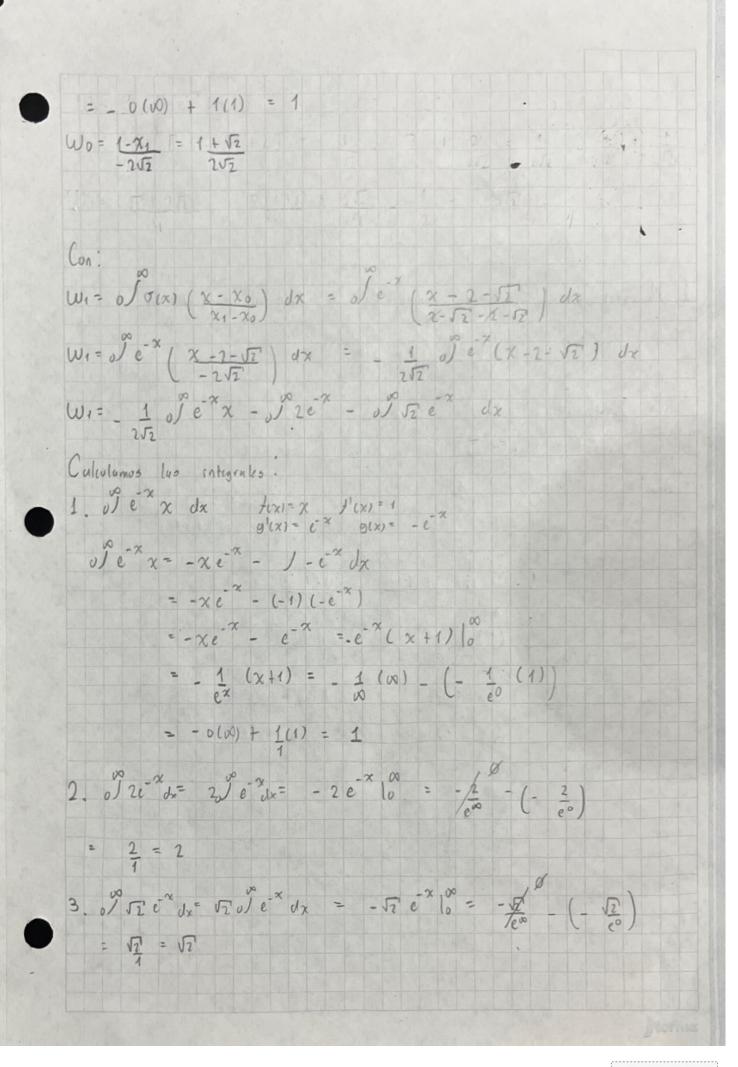
Parcial 2 25. Deducisón teórica de la wudratura de laguerre pora dos puntos a. Usando la tormula de Rodrigues, eneventre el polinomo de Laguere de orden 2. Formula de Rodrigues : Ln(x) = ex d^ (ex) Soru el Orden 2 =  $\lambda_2(x) = \frac{e^x}{2!} \frac{d^2}{dx^2} \left(e^{-x}x^2\right)$ Resolvemos la 2 desiroda respecto a x=  $\frac{d}{dx} \left( e^{-x} x^2 \right) = e^{-x} \left( 2x - x^2 \right)$  $\frac{d}{dx} \left( e^{x} (2x - x^{2}) \right) = e^{x} (2x - x^{2}) (-1) + e^{x} (2 - 2x)$ = e x (-2x+x2 +2 -2x)  $=e^{-x}(x^2-4x+2)=\frac{d^2}{dx^2}$ Reemplazamos. 22(x) = ex (ex (x2-4x+2)) drux)= 1 (x2-4x+2) 1/ Dato: 2! = 2/ b. Enwentre las raises del polinomio de orden 2, i, e. (Xo, X1). Rains. Jyvalus B. (2)  $0 = \chi^2 - 2x + 1$  (2) 0 = x2 - 4x +2 E. Coudialisto:  $\chi = -b^{\frac{1}{2}} \sqrt{b^2 - 44c} = 4^{\frac{1}{2}} \sqrt{16 - 4(1)(2)}$  $\chi = \frac{1}{4} + \sqrt{16 - 8} = \frac{1}{4} + \sqrt{8} = \frac{1}{4} + 2\sqrt{2}$ 





 $W_1 = \frac{1 - \chi_0}{2\sqrt{2}} = \frac{-1 + \sqrt{2}}{2\sqrt{2}} = \frac{1 + \sqrt{2}}{2\sqrt{2}} = \frac$ d. Muestre que la regla es exacta para un polinomio de grado tres 0 Sex 3 dx = \( \frac{5}{4} \text{ Wi } f(\frac{7}{4}) = 6 x3 = (2-52)3 = 20 +1452 N3= (2+ V2) = 20+14-52 Sumu. Wox3 + W1 x3 = (17 1/2) (20-14 /2) + (-1+1/2) (20 +14/2) 1.  $\frac{(1+\sqrt{2})(20-14\sqrt{2})}{2\sqrt{2}} = -8+6\sqrt{2}$ 2. (-1+1/2)(701(45) = 8+6521 Quedu: 4. - 3+652 + 3+652 = (-3+652) + (3+652) = 1252 = 252